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An Enigma: Barriers to the Identification of Gifted Students with
a Learning Disability

**An Enigma: Barriers to the Identification of Gifted Students with
a Learning Disability**

*Catherine Wormald, Diploma of Teaching (Secondary Maths) WIE, Graduate
Certificate in Education (Gifted Education) CSU, M.Ed. UWS.*

A thesis submitted for the degree of
Doctor of Philosophy
University of Wollongong

Faculty of Education

2009

STATEMENT OF ORIGINALITY

This thesis reported the original work of the author, except as stated.
It has not been previously submitted for a degree at this or any other university.

Catherine Wormald
November 2009

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This thesis is dedicated to my mother without whose personality traits I would not have survived, and to my husband for his faith in me and his love.

I also thank:

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ABSTRACT

The purpose of this research was to understand the barriers to the identification of gifted students with a learning disability. Gifted students with a learning disability are an enigma within schools and are underrepresented in programs for gifted students. The benefits to students, families and teachers of appropriate programs for gifted students with a learning disability have been well documented.

This study employed a mixed method of research and consisted of two phases which ran concurrently. In Phase 1 teachers from New South Wales Department of Education (NSW DET) schools, Sydney Catholic Education Office (CEO) schools in a metropolitan Sydney School Education Area, and an independent Kindergarten to Year 12 school were surveyed using the Survey of Practices with Students of Varying Needs (SOP). The schools included selective high schools, schools with opportunity classes as well as mainstream classes, comprehensive high schools and mainstream primary schools. A number of teachers were also interviewed.

In Phase 2 multiple case studies were undertaken. The participants consisted of students who were identified as gifted with a learning disability, their families and willing professionals they had consulted. Documents, results from various assessments and intervention programs, as well as reports from school counsellors, psychologists, occupational therapists, speech therapists, paediatricians and other educational consultants were provided and analysed. Students and their families were then interviewed.

The results of the research showed that teachers have knowledge of, and a positive attitude towards gifted students but are ambivalent towards students with other special needs. Teachers also demonstrated substantial confusion and conflict about their understanding of gifted students, their educational needs and their responsibility to these students and also students with special needs. There was virtually no understanding of gifted students with a learning disability.

The results indicated that identification of these students is occurring through the efforts of the parents and that there is minimal recognition and support from the schools. All the students have had negative experiences with respect to their schooling.

Finally it was recommended that an identification protocol be established in schools based on the information provided by the parents of the participants in this study. In addition teachers need to be provided with comprehensive training in this field and support from the decision makers across all sectors of education. Furthermore additional extensive research needs to be undertaken on gifted students with a learning disability. Specific research needs to be completed into the effectiveness of an instrument specifically designed for teachers focused on gifted students with a learning disability in order to assess the effectiveness of an identification protocol and in addition research on the social and emotional issues for these students.

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

Gifted students with a learning disability are an enigma within schools and education systems. They are often not recognised because their giftedness may mask their disability. These students fall into three categories. First are those whose giftedness is recognised and whose disability only becomes apparent as the difficulty in their schoolwork increases; second are those who are not identified as either gifted or with a learning disability because they are achieving at a grade level; and the third group are those who are identified as having a learning disability but whose giftedness is not recognised (Baum, Owen & Dixon, 1991).

Defining and identifying this group of students is difficult because learning disabilities and giftedness are considered to be mutually exclusive terms, and to exist at opposite ends of the education spectrum. Additionally, professionals in both fields have had difficulty agreeing on a global definition for the respective groups of giftedness and learning disabilities. Therefore to develop a definition of a gifted student with a learning disability would require elements from definitions of both a gifted student and a student with learning disabilities.

The researcher developed an interest in the field of gifted students with learning disabilities as a result of extensive work in gifted education. This involved positions in government, non-government and independent schools as well as at the head office level as a consultant. It was as a result of this work that the researcher developed an awareness of the unique needs of this population of students and the fact that these needs were not being met. Additionally the researcher has a child who is gifted with a learning disability.

Much has been written about gifted students with a learning disability but little empirical research has been undertaken. The research that has been undertaken has consistently demonstrated a poor understanding by teachers of this group, their special needs and appropriate educational programming required in order for them to reach their potential (Barton & Starnes, 1989; Baum, 1988; Baum, Cooper & Neu, 2001; Baum & Owen, 1988; Bees, 1998; Boodoo, Bradley, Frontera, Pitts & Wright, 1989; Karnes, Shaunessy & Bisland, 2004; Minner, 1990; Tallent-Runnels & Sigler, 1995). Bees (1998) and Weinfeld, Barnes-Robinson, Jeweler, and Shevita (2002) have demonstrated the benefits of programs that are designed specifically for these students and that consider not only their disabilities but also their giftedness.

1.2 SIGNIFICANCE OF THE STUDY

This study is important in order to understand teachers' and school counsellors' knowledge and perceptions of students who are gifted with a learning disability. This knowledge and understanding is vital as it affects not only the students but also their families and helps develop knowledge about the barriers to the identification of these students. Previous research has indicated that locating students who have a disability and are also gifted is difficult and, consequently, few have been formally identified (Boodoo et al. 1989; Tallent-Runnels & Seigler, 1995). This may suggest that teachers have a limited or non-existent understanding or awareness of this population of students, and are therefore unable to provide appropriate educational programs for them. This research will determine whether, like previous research, there is a lack of understanding by New South Wales educators. The in-depth case studies will provide data and a means for raising the profile of students who are gifted with a learning disability.

In recent times there has been a focus on gifted students with a learning disability but many articles provide opinion-based information for teachers and educators rather than empirical research. Further, the existing research has been undertaken in the US where there is a vastly different education system to what exists in Australia, and the question therefore arises as to the relevance of the research to the Australian Education system. Within Australia there has been no empirical research

undertaken to consider the educational needs of gifted students with a learning disability. This research was undertaken in NSW and has direct relevance to all teachers in Australia.

Educators and researchers have noted the need for appropriate programming for gifted students with a learning disability that recognises, supports and provides compensation strategies for their learning disability, and additionally recognises and provides for their giftedness (Baum, 1988; Bees, 1998; Baum, Emercik, Herman & Dixon, 1989; Hannah & Shore, 1995; Reis, McGuire & Neu, 2000; Reis, Neu & McGuire, 1997). The problem is that despite this knowledge there has been little or no improvement in the rate of identification of these students in the US and their inclusion in gifted programs. It is imperative that these students are identified and provided with opportunities to reach their intellectual potential. Therefore it is necessary to identify the barriers that result in these students not being identified. By recognising the barriers, teachers and allied educational professionals can be provided with information to support strategies and methods of identification.

1.3 PURPOSE OF THE STUDY

The initial purpose of this research was to understand the possible barriers to identifying students who are gifted with a learning disability. Research data have shown clearly the positive benefits of meeting these students' unique educational needs when these students are identified. It is therefore necessary to understand why these students are not being identified and to discover possible methods of overcoming these barriers in order to develop understanding and strategies for identification. Identifying is an essential first step towards teachers being able to develop appropriate educational programs that not only enhance these students' giftedness but also provide compensation strategies for overcoming their disabilities.

This purpose led to the development of the following research questions which guided the study.

1. What are the effects of not being identified as gifted with a learning disability?

- i. What are the academic effects on the student of not being identified as gifted with a learning disability?
 - ii. What are the socio-emotional effects of not being identified as gifted with a learning disability?
 - iii. What are the effects on the family of a child not being identified as gifted with a learning disability?

2. What factors contribute to non-identification of gifted students with a learning disability?
 - i. What are teachers' and school counsellors' attitudes to and knowledge of gifted students with a learning disability?
 - ii. What awareness do educators have of gifted students with a learning disability?
 - iii. How is gifted with a learning disability defined by schools, classroom teachers and parents?

3. What processes can be put in place to enable identification of gifted students with a learning disability?
 - i. How have students been identified as gifted with a learning disability?
 - ii. What strategies have worked in identifying gifted students with a learning disability?

1.4 RESEARCH DESIGN

The scope of the research topic suggested that a mixed methods approach was appropriate. Mixed methods research provides for multiple methods of data collection and hence multiple forms of data analysis (Johnson & Christensen, 2004). The research was conducted in two phases which ran concurrently. Phase 1 surveyed and interviewed teachers and school counsellors from eleven schools within the New South Wales Department of Education and Training (NSWDET), Catholic Education Office (CEO) and an independent school. Surveying teachers and schools counsellors provided information about their knowledge of and attitudes to students of diverse needs. Interviewing teachers and school counsellors

allowed for the participants' perspective to be presented, and to gain an understanding of the context in which teachers and school counsellors are working, and which had influenced their responses to the survey.

Phase 2 of the research used a multiple case study method of inquiry. Multiple case studies can provide evidence that is replicated and hence may be more compelling and robust (Yin, 2003). This research studied, in depth, students across a range of ages who were identified as gifted with learning disabilities. It provided evidence of the identification methods, interventions and strategies these students employed in order to manage not only their giftedness but also their disabilities.

1.5 STRUCTURE OF THE THESIS

This thesis is presented in 11 chapters. The following is a brief summary of each chapter.

Chapter one has provided an overview of the research topic, outlined the purpose of the study, the methods used and a brief description of the participants. It has also provided a rationale for the research and its importance.

Chapter two reviews the literature beginning with discussions regarding the definitions of giftedness, learning disabilities and gifted with a learning disability. It then considers the unique characteristics of these students noting the differences, as well as the similarities between students who are gifted and those who are not only gifted but who also have a learning disability. Current research and knowledge of possible methods of identification and programming are discussed. Additionally the research on the attitudes of teachers towards this group of students is presented as well as the role of gender in disabilities. Finally the importance of research into the identification of gifted students with a learning disability is presented.

Chapter three details the research design and the research questions guiding this study. The data collection instrument, research methods used, participants, and data analyses are outlined in detail. The limitations of this study are also presented.

Chapter four discusses the quantitative results of the analysis of the surveys of the teachers and school counsellors and details the information provided through analysis of the demographics data. Additionally analysis of the teacher interviews is presented in light of the survey results.

Chapters five to nine present the data and analysis of the five case studies and preliminary discussion of the findings.

Chapter ten presents the findings of the research by providing discussion and responses to each of the research questions that guided this study. These findings are presented in light of the research that has previously been undertaken studying students who are gifted with a learning disability. Recommendations are outlined for identifying gifted students with a learning disability and suggested areas of further research for this population of students.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

Students who are both gifted and have a learning disability represent a paradox within the education community. Until recently, such students were considered either to have a disability in learning or to be gifted. The possibility of being gifted and having a learning disability was not considered. Gifted students with a learning disability are often not identified as their giftedness may mask the disability and/or the student may be achieving at an appropriate grade for age level. On the other hand the student's disability may be identified rather than the giftedness and it becomes the overriding feature of the student and dictates the direction a student's educational program takes (Little, 2001).

Little research has been undertaken in the field of gifted students with a learning disability but there have been many articles and books written about this population. This chapter will review the research literature related to defining giftedness and talent, learning disabilities, and gifted students with a learning disability. Characteristics of gifted students and those with a learning disability will also be discussed as will current programming trends for these students. Teachers' and school counsellors' attitudes to students with diverse needs are also discussed. Finally the relationship between gender and learning disabilities will be considered.

2.2 DEFINITION

2.2.1 Giftedness

Many diverse definitions of gifted and talented exist, depending on the program to which the definition is being applied, and the criteria used for entry to the program. Over a period of time there has been a lack of clarity and understanding even amongst the experts about the terms gifted and talented, and it is common for these terms to be used interchangeably, often within a definition; at other times, however,

only giftedness or talent may be referred to in a specific definition. Stankowski (1987) in Davis and Rimm (2004) suggested five categories of definitions for gifts and talents: 'after the fact' definitions observing that those who have consistently achieved are gifted; IQ as a method of identification, specifying a cut off score; a fixed percentage of a school's population; a talent definition that focuses on a specific aesthetic or academic area; and superior creative ability. Definitions such as Renzulli's (1993) Three Ring Conception of Giftedness (see Figure 2.1) do not consider talent, but rather refer to giftedness as being the result of the interaction of the cluster of the three traits of above average intelligence, task commitment and creativity. Renzulli's model may preclude the identification of underachieving gifted students who may demonstrate a lack of task commitment particularly if they are assessed in an area in which they have no interest. Winner (1996) uses the term, gifted, to refer to children who demonstrate the atypical characteristic of precocity, who learn in a qualitatively different way, and who have an intense desire to learn about their particular domain of ability. Tannenbaum (1983) noted that defining giftedness in children is risky, and that talent only exists in adults, stating that *'producing knowledge with great inventiveness and impact, which is a sign of giftedness, comes later in a person's growth cycle'* (p. 86). He suggested that children do not have the ability to be talented but rather are only gifted in childhood and talented in adulthood.

Sternberg (1991) in his Triarchic Theory of Human Intelligence stated that there are three main kinds of giftedness – analytic, synthetic and practical. This theory like the Three Ring Conception of Giftedness provides opportunity for a range of sources of giftedness. Analytic intelligence means being able to see all the parts of a problem in order to solve it. Synthetic intelligence is similar to creativity, with practical intelligence being the ability to apply analytic and synthetic intelligence to practical situations.

Please see print copy for image

Figure 2.1 Renzulli's 'What Makes Giftedness' (1993)

The United States Office of Education definition, also known as the Marland Definition (1972), considered multiple areas of talent but did not distinguish between gifted and talented. It also represented many of the components suggested for an appropriate educational program for gifted students. This definition stated:

Gifted and talented children are those identified by professionally qualified persons who by virtue of outstanding abilities are capable of high performance. These are children who require differentiated educational programs and/or services beyond those normally provided by the regular school programs in order to realise their contribution to self and society.

Children capable of high performance include those with demonstrated performance and/or potential ability in any of the following areas, singly or in combination: (1) general intellectual ability, (2) specific academic aptitude, (3) creative or productive thinking, (4) leadership ability, (5) visual and performing arts, (6) psychomotor ability. (Gallagher & Courtright, 1986, p. 101)

It can be seen that over a period of time, as demonstrated by these various definitions, that there has been a distinct lack of clarity, understanding and

agreement amongst the experts about the terms gifted and talented, and that it is common for these terms to be used interchangeably. Gagné (2004) considered the different ways giftedness and talent had been defined and noted that the common theme of natural ability existed, which then became fully developed in adulthood. As a result he has developed the Differentiated Model of Giftedness and Talent (DMGT) which defines both giftedness and talent (see Figure 2.2). The DMGT considers not only the domain of intellectual giftedness but all domains of giftedness including creative, socioaffective and sensorimotor domains. This model has similarities to the Marland (1972) definition. Gagné's (2004) definition of gifted and talented has been adopted by all Australian State and Territory Departments of Education. Gagné's (2004) DMGT model has been developed and modified over a number of years. A modification of the model was created in 2008 (see Appendix A). This research is presenting the 2004 model of the DMGT, however, as it is the model which underpins the New South Wales Department of Education and Training (NSW DET) gifted education policy.

Gagné (2004) states that:

Giftedness designates the possession and use of untrained and spontaneously expressed natural abilities (called outstanding aptitudes or gifts), in at least one ability domain, to a degree that places the individual at least among the top 10 percent of age peers.

And

Talent designates the outstanding mastery of systematically developed abilities (or skills) and knowledge in at least one field of human activity to a degree that places an individual at least among the top 10 percent of age peers who are or have been active in that occupational field or fields.
(p.120)

It can be seen from these two statements that giftedness is referred to as a natural ability that develops into mastery, which is described as talent. This talent develops through the application of catalysts. In order for this development to occur there are four other components to the DMGT (Figure 2.2). They are intrapersonal catalysts

(IC), environmental catalysts (EC), the talent development process (P) and chance factors (C). The development process is acted on, and works in conjunction with the intrapersonal and environmental catalysts. Within each of these catalysts there are several characteristics which can impact in a positive or negative way on the developmental process. These catalysts can either enhance the developmental process or hinder it. Gifted students with a learning disability need to overcome deficits in the area of intrapersonal catalysts. As a result of their disability they may have problems with time management, concentration, motivation and self-efficacy.

One aspect of the developmental process over which there is no control is the chance factor. The biggest impact of chance is on the environmental catalysts as children can have no control over the socioeconomic status of their parents, their parents' parenting skills or the inherited aspect of natural abilities. Gagné's (2004) definition means that a student can be gifted without developing talent but a student cannot develop talent without first being gifted.

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Figure 2.2 Gagné's Differentiated Model of Giftedness and Talent (DMGT) (2004)

2.2.2 Learning Disabilities

Learning disabilities is a term that describes a wide spectrum of learning problems. Most teachers and parents would have an awareness of the term and may have at some stage come across children who demonstrated a learning disability.

Students with a learning disability may be described as having difficulty learning, and will require modifications to their education programs. They do not include individuals whose learning is affected due to visual impairment, hearing impairment, mental retardation or physical disabilities. Students with a learning disability may include, but are not limited to individuals who have problems with: listening, speaking, reading, written expression, mathematics, reasoning and processing (Bateman & Chard, 1995). Despite the exclusion of students with a physical disability, learning is impacted when a gross or fine motor disability exists and should therefore be included in a definition of students with a learning disability.

Difficulties with information processing skills occur most frequently for students with learning disabilities. Some of the most common processing problems are: phonological difficulties including dyslexia and reading difficulties; visual and spatial difficulties, including problems correctly perceiving shapes and graphical representations such as letters and numbers; and memory difficulties, both short and long term. Types of learning disabilities include: dysgraphia – difficulty forming letters and writing using appropriate spacing of words and letters on a page; dyscalculia – difficulty with mathematical concepts; dyslexia – difficulty with reading, and additionally, nonverbal learning disabilities – difficulty processing and storing visual and auditory information.

Professionals have attempted to define learning disabilities and to reach a consensus regarding a definition (Hammill, Leigh, McNutt & Larsen, 1987) and several organisations have proposed various definitions (Mercer, Jordan, Allsopp & Mercer, 1996). These definitions had more in common than they had differences.

The Individuals with Disabilities Act (IDEA) (1977) defined a learning disability as:

A disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, spell or to do mathematical calculations. The term includes such conditions as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia and developmental aphasia. The term does not apply to children who have learning problems that are primarily the result of visual, hearing or motor disabilities, of mental retardation, of emotional disturbance, or of environmental, cultural or economic disadvantage. (cited in Bateman & Chard, 1995, p. 3)

Children in the US are protected under Public Law 108-446, the Individual with Disabilities Education Improvement Act (IDEA – 2004) which is little changed from the 1977 definition, but specific language was defined in more concrete terms (National Association of Special Teachers Introduction to Learning Disabilities, undated). The National Health and Medical Research Council of Australia's 'Learning Difficulties in Children and Adolescents' document (1990) defined a learning disability in a similar manner to the above definition and in addition suggested a percentage (2%–4%) of the population who may be affected by learning disabilities.

Within the NSW DET the students described in the above definitions are referred to as experiencing learning difficulties rather than learning disabilities. The NSW DET's (2005) definition states that:

Students experiencing learning difficulties are not achieving at a level expected for their age and stage of development. Students may have difficulties learning and maintaining new skills and information. These difficulties may vary in cause, nature, intensity and duration. A difficulty with learning can occur at any time throughout a student's school life. In

any school there may be students who experience difficulties in learning. (p. 5)

Internationally the term ‘learning disabilities’ is used in the research and widely accepted by many in the field, but within Australia and specifically the NSW DET, the term ‘learning difficulty’ is used. The term ‘disabilities’ describes a condition which is manifested through a student having difficulty with various aspects of their learning. Even though this research is being conducted in NSW the term ‘learning disabilities’ rather than ‘learning difficulties’ will be used because this term is more widely accepted internationally.

Kavale, Forness and Lorschach (1991) argued that whilst a definition is basic to the understanding of learning disabilities, any definition is unlikely to be universally accepted and therefore effort should instead be concentrated on what a definition means in practice. The General Information Packet from the National Center for Learning Disabilities (undated) suggested that the criteria for having a learning disability are: *‘has an average or above average intelligence, exhibits unexpected discrepancy between potential and actual achievement and performs poorly because of difficulty in one or more of the areas of listening, speaking, reading, written expression, mathematics and reasoning’* (p. 2).

These criteria guide through exclusion, that is the ruling out of potential causes of learning problems, one method of the identification of students with learning disabilities. Torgesen (2001) questioned whether it was still necessary to identify students with a learning disability this way, that is ruling out possible causes of learning problems such as sensory or emotional impairment, when significant advances have been made in scientific knowledge. Instead he proposed that students be identified by assessing their *‘intrinsic processing weaknesses’* (p. 2). Bateman and Chard (1995) noted that a common way of identifying students with a learning disability was through the identification of a discrepancy between a student’s potential and their actual achievement. This discrepancy was assessed through the use of a formula which usually included an IQ assessment. Siegel (1989), though, questioned the use and validity of IQ assessment as a tool for identifying students with a learning disability and noted that specific tests of

academic achievement provide more information about the difficulties a learning disabled child is experiencing. Additionally she states that an IQ test penalises a student from a different cultural or minority background. Klassen, Neufeld and Munro (2005) also noted that IQ is not always relevant when defining learning disabilities and that moving to a low achievement method of identification of learning disabilities allowed for appropriate information about the disabilities to be gained and appropriate interventions implemented (see also Graham & Harris, 1989).

Definitions and identification criteria for learning disabilities all exclude students who have learning problems as a result of visual, hearing or motor disabilities, mental retardation, emotional disturbance, or environmental, cultural or economic disadvantage. Even though there is not an agreed universal definition, the existing definitions demonstrated more similarities than differences. Despite the similarities and acceptance of the various definitions over time, perhaps they do not represent an appropriate set of conditions for inclusion or exclusion. Physical disabilities can affect a child's ability to learn as can economic disadvantage, which may preclude a student from being assessed for learning disabilities and access to appropriate interventions. Emotional disturbance may develop as a result of a student's disability not being recognised and appropriate interventions or support not being provided. Additionally none of the definitions specifically noted that a student may not only have a disability, but may also be gifted. Students with a learning disability are considered to be of average or above average intelligence, but the word gifted is not used.

2.2.3 Gifted learning disabled students

Defining a student who is gifted with a learning disability would require elements from definitions of both a gifted student and a student with learning disabilities. This would mean a gifted student, who has a learning disability, may be defined as a student with natural abilities in intellectual, creative, socio affective or sensorimotor domains, and at the same time have impairment in processes related to learning, thinking, remembering, or perceiving. One way this may be manifested

is through a discrepancy between potential and actual achievement. McCoach, Kehle, Bray and Siegle (2001) defined gifted learning disabled students in a similar way but were more specific in noting individual academic fields. McCoach et al. (2001) stated that:

Gifted/learning disabled students are students of superior intellectual ability who exhibit a significant discrepancy in their level of performance in a particular academic area such as reading, mathematics, spelling or written expression. Their academic performance is substantially below what would be expected based on their general intellectual ability. (p. 405)

Baum (1990), on the other hand, provided a more generalised definition stating that gifted students with a learning disability will not only exhibit remarkable talents or strengths in some areas but also disabling weaknesses in others. Brody and Mills (1997) similarly noted that these students display outstanding talent or ability but also exhibited a discrepancy between expected and actual achievement.

The NSW DET document, *'Policy and implementation strategies for the education of gifted and talented students, revised 2004, Support Package, Identification'*, includes a section on *'Gifted students with special needs'* and includes Baum's definition, further stating that this definition *'suggests a student who has the potential to achieve at a high level academically but whose learning characteristics and educational needs require special identification'* (p. 13). This is the first time in NSW that these students have been recognised within a DET policy document specifically written for gifted students.

Many definitions related to gifted students with a learning disability highlighted the view that there exists a discrepancy between performance and potential, providing little additional detail such as can be found in the separate definitions for learning disabilities and giftedness. There is in fact confusion as to the differences between gifted learning disabled and gifted with learning difficulties. Even within a single

research article authors will switch between the terms learning difficulties and learning disabilities. This imprecision in the use of these terms in the literature, may have contributed to the lack of understanding of these students, and the increased difficulty of defining this group. The differences, boundaries and lack of recognition between the various definitions of learning disabled, gifted, and gifted with a learning disability, makes it difficult for teachers to find the links, and thus define and identify students who are both learning disabled and gifted.

A more precise and comprehensive definition has been developed in the US by a joint commission of participants representing the National Research Center on the Gifted and Talented (NRCGT), Association for the Education of Gifted Underachieving Students (AEGUS) and the Bridges Academy Joint Commission for Twice Exceptional Learners. The definition states:

Twice-exceptional learners are students who give evidence of the potential for high achievement capability in areas such as specific academics; general intellectual ability; creativity; leadership; AND/OR visual, spatial, or performing arts AND also give evidence of one or more disabilities as defined by federal or state eligibility criteria such as specific learning disabilities; speech and language disorders; emotional/behavioural disorders; physical disabilities; autism spectrum; or other health impairments, such as ADHD.
(personal communication 15/09/09)

This definition includes emotional disorders as well as physical disabilities which have been excluded in other definitions of disabilities. Additionally it specifically lists visual spatial and performing arts as areas of exceptionality.

2.3 CHARACTERISTICS

The characteristics of a gifted student with a learning disability have been well documented and researched (Barton & Starnes, 1989; Baum & Owen, 1988; Brody & Mills, 1997; Hishinuma & Tadaki, 1998; Munro, 2002). This has provided an understanding of the characteristics they have in common with their gifted peers, in addition to what sets them apart from their learning disabled and average learning disabled peers. According to case study research undertaken by Baum et al. (1989)

and in studies by Yewchuk (1983), gifted learning disabled students demonstrated many of the characteristics of their gifted peers, but were also recognised as a heterogeneous group (Barton & Starnes, 1989) with their own unique characteristics. After comparing 112 students in grades four to six who were divided into groups of gifted, learning disabled average, and gifted learning disabled students, Baum and Owen (1988) concluded that gifted learning disabled students are different from both gifted students and learning disabled students. A number of instruments were used to assess and compare cognitive and motivational patterns amongst the three groups. The cognitive and motivational variables of academic self-efficacy, creative potential, interests, disruptive behaviour, general concept and attributions for academic success and failure were used by Baum and Owen (1988) in their research. Data were collected over a five month time frame. One of the major differences found between gifted learning disabled students and gifted students, was that the gifted learning disabled students had a low sense of self-efficacy in school compared to the gifted group. This and other differences indicated that these students need to have programs specifically designed for meeting their unique educational needs.

As a result of a review of the research, Mills and Brody (1997) noted that gifted learning disabled students will display outstanding ability or talent but will also exhibit a discrepancy between expected and actual achievement. A discrepancy between achievement and potential has also been noted by Baum and Owen (1988) and Silverman (1989). Hishinuma and Tadaki (1998) noted that gifted learning disabled students have strengths in areas such as problem solving and reasoning skills and advanced verbal and comprehension skills. These characteristics are similar to those displayed by gifted, non-disabled students. These characteristics have also been observed by Silverman (1989). Understanding subtle relationships and displaying skill at abstract reasoning, characteristics also similar to their gifted peers, have been noted by Maker and Udall (1997), Silverman (1989), and Yewchuk (1983).

Other positive characteristics of gifted learning disabled students which are similar to their gifted peers include excellent observational skills, mathematical reasoning, exceptional ability in geometry and science, a sophisticated sense of humour,

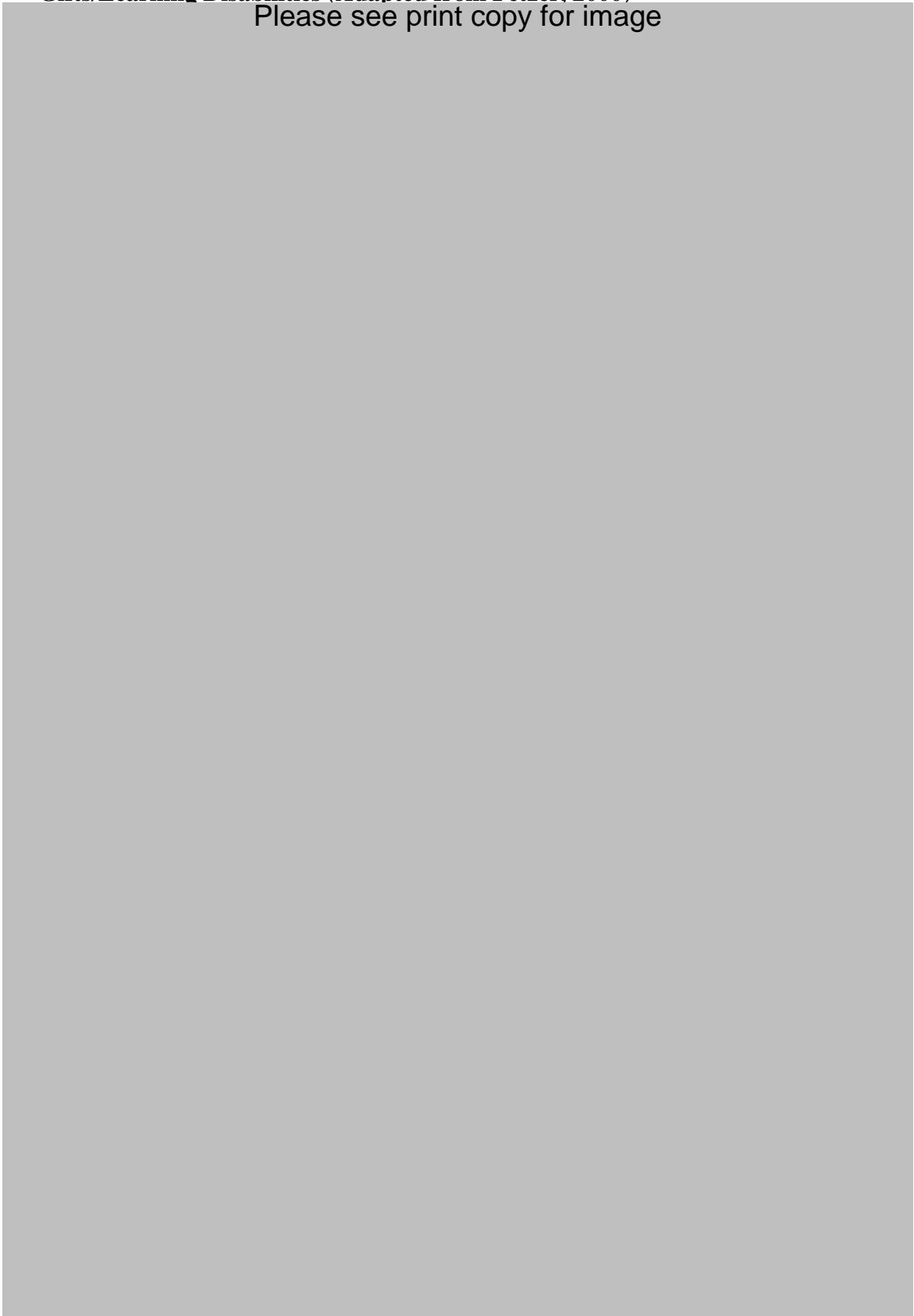
artistic, musical or mechanical ability, and general knowledge related to a wide variety of topics (Baum & Owen, 1988; Bisland, 2004; Gunderson, Maesch & Rees, 1987; Maker & Udall, 1997; Mills & Brody, 1997; Munro, 2002; Silverman, 1989).

Many of the areas of weakness displayed by a gifted learning disabled student can cause major academic problems, which may require some remediation or specialised help, depending on the degree of severity of the disability. Silverman (1989) observed that areas of potential weakness may include difficulty with phonics, spelling, rote memorisation, computation and performance on timed tests. These areas of potential weakness were also noted by Weinfeld, Barnes–Robinson, Jeweler and Skevitz (2002). Research conducted by Baum and Owen (1988) with 112 gifted or learning disabled students across grades four, five and six, in six school counties in Connecticut, concluded that gifted learning disabled students caused the most disturbances in classrooms.

Maker and Udall (1997) noted that additional weaknesses observed in gifted learning disabled students included poor handwriting and a lack of organisational skills. Betts and Neihart (1988), after observations, interviews and reviews of the literature, developed six profiles of gifted and talented students, including a profile of the gifted learning disabled student. The authors described a gifted learning disabled student as one who had sloppy handwriting, showed signs of stress, and felt isolated, discouraged and had low self esteem. Barton and Starnes (1989), as a result of analysing WISC-R scores in order to identify a pattern of characteristics to define the gifted learning disabled students, noted that low self esteem and low self efficacy were also characteristic of these students. This view is supported by Silverman (1989) in her studies of gifted learning disabled students. Fetzner (2000) compiled a table from various sources (see Table 2.1) of positive and negative characteristics of gifted students with a learning disability. Barton and Starnes (1989) noted that students who are gifted with a learning disability have more in common with their gifted peers than their learning disabled peers. This observation has implications for the educators planning programs for these students, and implementing methods of identification.

**Table 2.1 Positive and Negative Characteristics of Children with
Gifts/Learning Disabilities (Adapted from Fetzner, 2000)**

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2.4 IDENTIFICATION

Identification processes for gifted programs and learning disability services are mutually exclusive and there is not an identification protocol that takes into account those students who would fit in both populations (Boodoo et al., 1989). Students are identified for gifted programs or for remediation, or may not be identified for either because they are performing at a level commensurate with their chronological cohort.

Baum et al. (1991) identified three subgroups of gifted students with a learning disability. The first group are students identified as gifted who have subtle learning difficulties, which become apparent as the level of work undertaken at school increases in difficulty. This group is often placed in programs for gifted students, but creates frustration for the teacher and themselves as they fail to reach expected outcomes the more difficult the work becomes. The second group are those who are not identified as gifted or having a learning disability, as they are achieving at a grade level. These students will fail to reach their potential as they will be working very hard to maintain average grades. The third group are the students who are identified for their learning disability. These students are often placed in remedial programs. The possibility that they may be gifted is not even considered or identified.

Little research exists on ways to identify gifted students with a learning disability for specialist programs. Schiff, Kaufman and Kaufman (1981) compared the WISC-R scores of 30 children with at least one IQ score above 120, to determine whether a pattern of IQ subtest scores could be established and used to identify gifted learning disabled students. Barton and Starnes (1989) duplicated the research by Schiff et al. (1981) and compared the WISC-R scores of two groups of students – gifted and gifted learning disabled – from public schools within a county in the US. Both groups of researchers found Verbal and Performance IQ discrepancies, with Verbal generally being higher. The data, though, did not show a consistent pattern of subtest scores for the identification of gifted learning disabled students. The researchers found that analysis of the subtest scores on the WISC-R can give an indication that a student is gifted with a learning disability, but it is not enough by itself to identify these students. Identification of these students, therefore, cannot rely solely on IQ scores. Waldron and Saphire (1990) also established that *‘there is no evidence that rank ordering of WISC-R subtests is an effective method of identifying the existence of a learning disability’* (p. 497).

Maker and Udall (1997) suggested that a wide variety of information is required in order to identify gifted learning disabled students. IQ tests, diagnostic achievement tests, parent interviews, tests of aptitude and creativity are some of the means recommended by Maker and Udall (1997) for identification of these students. It has been suggested that rather than trying to find a pattern of scores for identifying gifted students with a learning disability, consideration should be given to the three defining characteristics of: an outstanding talent or ability, a discrepancy between expected and actual achievement, and a processing deficiency (Brody & Mills, 1997). Munro (2002) argued that the use of dynamic assessment is one appropriate method that would be useful in identifying gifted students with a learning disability in addition to assessing their *‘general ability, creativity and divergent thinking, motivation, learning disability, aptitude in a particular area, self concepts, metacognition and self management’* (pp. 27-28).

Through observation and research, the characteristics of gifted students with a learning disability have been determined and some information provided about various strategies that are useful when identifying these students. In general, though, they are underrepresented in gifted programs. For example, Boodoo et al. (1989) surveyed Special Education teachers and directors of gifted programs in Texas and found that teachers and schools did not deal well with identifying and therefore providing for gifted learning disabled students. At the time Boodoo et al. (1989) undertook this research, programs for gifted students were not mandated in Texas. Mandating did not occur until later in 1990 and made little difference to the number of gifted learning disabled students participating in programs for the gifted in Texas. For example, research undertaken in 1995 by Tallent-Runnels and Sigler in which they surveyed gifted program coordinators in Texas, found that little had changed since the research undertaken by Boodoo et al (1989) and that the rate of identification of gifted learning disabled students had in fact dropped from 23% to 19.7%.

Similar results were found by Karnes et al. (2004) when they surveyed directors of public school programs for the disabled. These directors were also responsible for the gifted students in the state of Mississippi. This research concluded that identification was poorly done and further research was required in order to understand why these students were not being identified and placed in appropriate educational programs. Olenchak and Reis (2002) suggested that teachers rely on discrepancies between scores on achievement and ability tests as well as analysis of IQ subtests for identifying gifted learning disabled students. Barton and Starnes (1989) asserted from their research that further study into ways of identifying gifted learning disabled students by educators needed to be undertaken in order to provide inexpensive markers to facilitate early identification.

Although research has identified the characteristics of gifted students with a learning disability and recommendations have been made about appropriate strategies that can be used to identify these students, Boodoo et al. (1989) found that teachers and schools did not deal well with identifying and therefore providing for these students. The little research that has been undertaken into specific methods for identifying these students indicated that it is done poorly, is not well

understood, and further research needs to be completed in order to establish why there is a lack of representation of these students in programs for the gifted.

The definition proposed by the Joint Commission of Participants representing the NRCGT, AEGUS and the Bridges Academy Joint Commission for Twice Exceptional Learners provides a basis for the identification of these students. It states that:

Identification of twice-exceptional students requires assessment in both the areas of giftedness and disability as one does not preclude the other. Twice-exceptional students qualify to receive an individual education plan (IEP). This plan must address both their strengths and weaknesses. Twice-exceptional students require differentiated instruction, accommodations and or modifications, direct services, specialized instruction, acceleration options, and opportunities for talent development. These services are necessary for twice-exceptional students to achieve growth at a level commensurate with their abilities, develop their gifts and talents, and learn compensation skills and strategies to address their disabilities. (personal communication, 15.09.09)

This statement provides clear directions for the identification of gifted students with a learning disability. It indicates a basis on which research may be undertaken in order to ensure that these students receive an appropriate educational program that allows them to achieve their potential.

2.5 PROGRAMMING

Over a period of time gifted learning disabled education has received increased attention in developing and providing appropriate educational programming for these students (Baum, 1988; Bees, 1998; Hishinuma & Nishimura, 2000; Shevitz, Weinfeld, Jeweler, & Barnes-Robinson, 2003; Weinfeld et al. 2002), in addition to

integration and teaching strategies (Baum et al. 2001; Bisland, 2004). Whilst research has taken place into appropriate programming for gifted learning disabled students, it should be noted that the number of identified students for placement in these specialist programs has actually decreased (Tallent-Runnels & Sigler, 1995). There seems little point in providing programs for these students if they cannot be formally identified for placement.

Research on programs and strategies that focused on students' giftedness rather than their disability found that such programs led to an increase in self esteem, improved learning behaviour and creative productivity. For example, Bees (1989) studied a program implemented in Vancouver that included resource room support for the students' learning disability and enrichment for their giftedness and concluded that providing meaningful connection for gifted learning disabled students contributed to the success of the program. Baum and Owen (1988), in their research comparing high ability students, high ability/learning disabled and average /learning disabled students, concluded that feelings of self-efficacy are improved by providing programs that recognise their giftedness as well as their learning difficulty, and this in turn led to greater achievement when the student's gifts were acknowledged.

In another study, Baum et al. (1989) undertook case studies of four programs specifically designed for gifted learning disabled students and concluded that when the student's giftedness is recognised and nurtured, there is an increased willingness by the student to complete tasks, and a decrease in the unsuitable behaviours which affect their learning. Such behaviours included '*disruptive tendencies, inattentiveness or short attention span, task avoidance and manipulation tactics*' (p. 53).

Baum (1988), in a study of an Enrichment Program for seven gifted learning disabled students in grades four and five, concluded that as a result of the enrichment program, '*learning behaviours, time on tasks and motivation showed marked improvement when the students involved selected their own content area, became personally involved with their product and were directed toward a goal*' (p.

229). As a result of this work, she constructed the following guidelines for educators working with gifted learning disabled students.

1. *Focussed attention should be given to the development of gifts or talents in its own right;*
 2. *Gifted learning disabled students require a supportive environment which values and appreciates individual abilities;*
 3. *Students should be given strategies to compensate for their learning problems as well as direct instruction in basic skills;*
 4. *Gifted learning disabled students must become aware of their strengths and weaknesses and be helped to cope with the wide discrepancy between them.*
- (Baum, 1988, p. 230)

Research by Baum et al. (1989) and Hannah and Shore (1995) in educational provisions for gifted learning disabled education also confirmed the above themes.

In another example, Weinfeld et al. (2002) established that four major components are required for successful programs for gifted learning disabled students. These components were the result of a specialist program that was developed and implemented in a county in the US. The components were:

1. *Gifted and talented instruction in the student's area of strength;*
2. *Opportunities for the instruction of skills and strategies in academic areas affected by the student's disability;*
3. *An appropriately differentiated program, including individualised instructional adaptations and accommodations systematically provided to students;*
4. *Comprehensive case management to coordinate all aspects of the student's individual educational plan.* (p. 23)

Successful programs for gifted students with a learning disability are programs that recognise their giftedness and provide educational opportunities that allow for enrichment and extension. At the same time they need to recognise that they have learning disabilities that require help and the development of compensation

strategies for overcoming their learning disabilities. Placement in these programs depends on educational professionals recognising and identifying these students. If teachers cannot identify these students there seems little point in establishing specialist programs. It is important that research into identification methods is undertaken in order to enable these students to have their educational needs met.

2.6 TEACHER ATTITUDES

Teacher attitudes are often reflected in their behaviours in a classroom. Pierce and Adams (2004) surveyed pre-service and experienced teachers and discovered that there was little difference in the teachers' attitudes to diverse learners and that a lack of understanding of the gifted learning disabled was demonstrated. The researchers hypothesised that this could be as a result of the teachers who completed the survey having little understanding of gifted learning disabled students. If the teachers do not have a positive attitude towards gifted learning disabled students and an understanding of their uniqueness, there is little chance of these students being identified. For example, McCoach and Siegle (2005) discovered after surveying 1500 teachers, that the special education teachers tended to have negative attitudes towards the gifted. The attitudes of the teacher participants in this particular research project would indicate that the possibility a student exists who is gifted with a learning disability would not be considered. This research outcome supported research by Minner (1990) who claimed that classroom teachers, which included teachers of the gifted, *'hold stereotypical notions about learning disabled and/or gifted students which, in turn may cause them not even to consider such children potentially eligible for placement in a program for gifted youngsters'* (p. 38). She also noted that students who were learning disabled or from low socio-economic backgrounds were unlikely to be referred for gifted programs by the teachers of gifted programs.

For students who are gifted with a learning disability, identification and effective appropriate educational programming requires the cooperation of the teachers of the gifted as well as the special education teachers. Ferrara (2006) surveyed pre-service teachers in their first and third year of training and found that there was no real

difference between the two groups in their attitudes towards gifted learners or learners with special needs. This would indicate that given the right training and perhaps ongoing support, these pre-service teachers may develop positive attitudes towards gifted learning disabled students within schools. Karnes et al. (2004), as a result of their survey of directors of public school programs for the disabled and the gifted, concluded that teachers needed assistance to develop positive attitudes towards gifted students with a learning disability.

It is apparent that more research relating to the attitudes and the understanding that teachers and school counsellors have of gifted students with a learning disability is warranted in order to understand why this group of students are not being identified and placed in appropriate educational programs. Questions to be researched would include: what are the factors leading to the under representation of gifted learning disabled students in the classroom and to what extent do teachers' attitudes contribute to a lack of identification of these students?

2.7 GENDER AND DISABILITIES

The National Association of Special Education Teachers (undated) noted that three times as many boys as girls are identified by schools as having learning disabilities not because girls do not have learning disabilities but rather that they are unidentified and do not receive remediation. Mann (2006) also observed that boys were outnumbering girls in a school for students with learning disabilities by three to one. The Council for Exceptional Children (n.d.) points out that more boys have trouble in school and are then referred for special education. They argued that boys learnt differently from girls and special education teachers have not been trained in the different ways boys and girls learn.

Shaywitz, Holahan, Freudenheim, Flethcer, Makuch and Shaywitz (2001) reported in their research that only male subjects were participants as very few girls had been identified by schools as having a learning disability. Phipps (1982) stated that as many as 85% of students receiving special programs in public schools, including students who are learning disabled and behaviourally disordered, were boys.

Coutinho and Oswald (2005) noted in their research that boys are twice as likely as girls to be identified with a learning disability and Nass (1993) noted that '*boys more often than girls are affected by cognitive developmental disorders of childhood*' (p. 61).

2.8 CONCLUSION

Research on the characteristics and programming requirements of gifted students with a learning disability has been highlighted, in addition to their uniqueness, the need for specific programs that recognise their giftedness as well their learning disability, and the problems that develop if these students' educational needs are not catered for has been discussed. Even if specialist programs are in place, the rate of identification is poor (Tallent-Runnels & Sigler, 1995). Research by Boodoo et al. (1989) demonstrated that gifted learning disabled students were not being identified and that teachers did not have an understanding of these students. Tallent-Runnels and Sigler's (1995) follow up study demonstrated that nothing had changed and that identification rates had actually fallen. The extent to which the attitudes of teachers towards students of diverse needs affect the identification of this population has not been fully researched. Other research has observed that identified learning disabled gifted students are difficult to locate (Baum & Owen, 1988; Hannah & Shore, 1995; Nielsen & Mortorff-Albert, 1989; Schiffet al. 1986). Other research is also linked to the concept that teachers' understanding and awareness of this population is limited or non-existent (Baum & Owen 1988; Bees, 1998; Brody & Mills, 1997; Gundersen et al. 1987).

Despite some advances in meeting the needs of this unique population of students the research has demonstrated that there has been little or no improvement in the rate of identification of these students and in turn their admittance to specialist programs for the gifted. Research needs to be undertaken in order to understand what the barriers are to these students being identified and then placed in appropriate educational programs that address not only their giftedness but also their disability.

CHAPTER 3

RESEARCH METHOD

3.1 INTRODUCTION

The purpose of this research was to understand why students who are gifted and also have a learning disability are not being identified in schools, and therefore not being provided with an appropriate educational program. These students can often be found in specific programs for gifted students and programs for students with learning disabilities, but are rarely located in an educational program that addresses both their giftedness and their learning disability. In particular it was hoped that this research would provide guidance and direction for teachers, school counsellors and other allied health professionals in identifying and meeting the needs of this special population of students. In order to understand the barriers to identification of these students, the following research questions guided this study:

1. What are the effects of not being identified as gifted with a learning disability?
 - i. What are the academic effects on the student of not being identified as gifted with a learning disability?
 - ii. What are the socio-emotional effects of not being identified as gifted with a learning disability?
 - iii. What are the effects on the family of a child not being identified as gifted with a learning disability?
2. What factors contribute to non-identification of gifted students with a learning disability?
 - i. What are teachers' and school counsellors' attitudes to and knowledge of gifted students with a learning disability?
 - ii. What awareness do educators have of gifted students with a learning disability?
 - iii. How is gifted with a learning disability defined by schools, classroom teachers and parents?

3. What processes can be put in place to enable identification of gifted students with a learning disability?
 - i. How have students been identified as gifted with a learning disability?
 - ii. What strategies have worked in identifying gifted students with a learning disability?

3.2 DESIGN

The scope of the research topic suggested that a mixed methods approach was appropriate. Mixed methods research provides for multiple methods of data collection and hence multiple forms of analysis (Johnson & Christensen, 2004). The use of only quantitative or qualitative research methods would limit the extent of the knowledge to be gained from this research. A mixed method allows for insight and greater understanding than if a single method of research was used (Johnson & Christensen, 2004). Teachers and school counsellors were one target of the research as they are the personnel who interact with the students for the majority of the time they are at school, and who therefore have the greatest opportunity to recognise gifted students who may have a learning disability. Additionally, a lack of identification of students who are gifted with a learning disability needed to be studied not only from the teachers' and education system perspective, but also that of the students.

The research was conducted in two phases which ran concurrently (see Figure 3.1). Phase 1 surveyed and interviewed teachers and school counsellors. Quantitative data such as that obtained from surveying provides numerical values from which a specific population can be statistically analysed. The results of statistical analysis and quantitative demographic data can demonstrate trends and provide a general picture (Creswell, 2002). Surveying the teachers and school counsellors provided information about their knowledge of and attitudes to students of diverse needs.

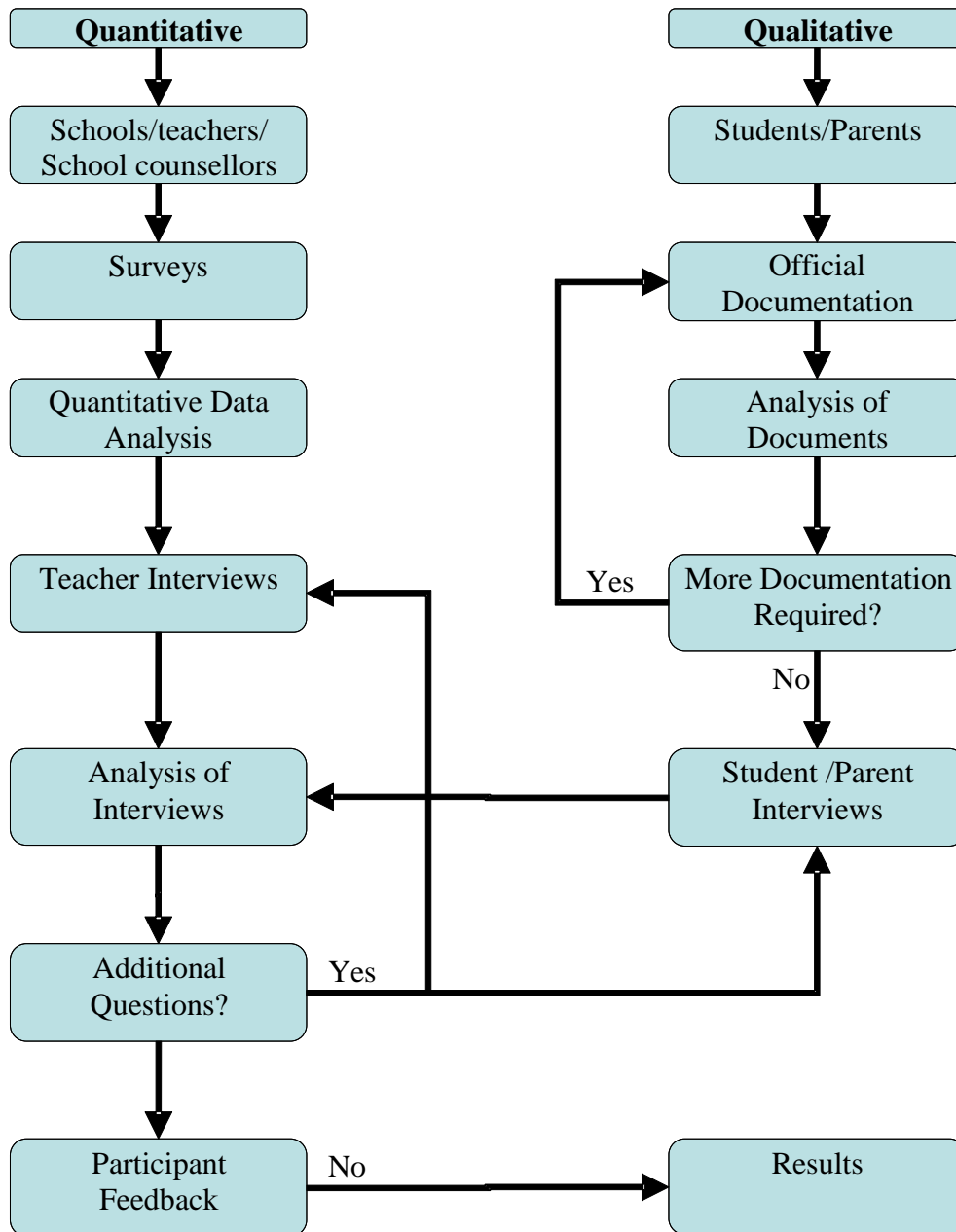


Figure 3.1 Research Process

Analysis of the surveys would provide an answer to the research question and sub question:

2. What factors are contributing to non-identification of gifted students with a learning disability?

- i. What are teachers' and school counsellors' attitudes to and knowledge of gifted students with a learning disability?

Whilst surveying teachers provided data for statistical analysis it could not provide in-depth information on teachers' and school counsellors' understanding and knowledge of students with diverse learning needs. Qualitative data, though, allow for the participants' perspectives to be presented and to gain an understanding of the context in which teachers and school counsellors work and which has influenced their responses to the survey (Creswell, 2002). It provides an opportunity to build on the information from analysis of the surveys in order to gain an understanding of their attitudes to and knowledge of gifted education and to be able to answer the research sub questions:

- ii. What awareness did educators have of gifted students with a learning disability?
- iii. How is gifted with a learning disability defined by schools, classroom teachers?

Phase 2 of the research used a multiple case study method of enquiry. Multiple case studies can provide evidence that is replicated and hence may be more compelling and robust (Yin, 2003). This research studied, in-depth, five students from Kindergarten to Year 12 who had been identified as gifted with a learning disability. The findings that emerge from multiple case studies are more reliable than those from a single case study and can be considered "*as one would consider multiple experiments – that is to follow 'replication' logic*" (Yin, 2003, p. 47).

The multiple case studies provided evidence to answer the following research questions and sub questions:

1. What are the effects of not being identified as gifted with a learning disability?
 - i. What are the academic effects on the student of not being identified as gifted with a learning disability?

- ii. What are the socio-emotional effects of not being identified as gifted with a learning disability?
 - iii. What are the effects on the family of a child not being identified as gifted with a learning disability?
- 3. What processes can be put in place to enable identification of gifted students with a learning disability?
 - i. How have students been identified as gifted with a learning disability?
 - ii. What strategies have worked in identifying gifted students with a learning disability?

This research studied students identified as gifted with different learning disabilities across a range of ages. It provided evidence of the identification methods, interventions and strategies these students employed in order to manage not only their giftedness but also their disabilities. The findings which emerged consistently across all cases would provide more reliable evidence than that which would have emerged from a single case study.

Case studies as defined by Yin (2003) are studies of events within a real life context. The students and families involved in this research are currently living with the issues of being gifted with a learning disability, and being educated within the existing education systems in New South Wales (NSW) and the Australian Capital Territory (ACT).

3.3 RESEARCH METHOD

3.4 PHASE 1 - Educational Professionals, Their Knowledge and Attitudes

3.4.1 Pilot study

A pilot study was conducted in one comprehensive high school in Sydney, Australia. Six teachers volunteered to participate – a principal, a deputy principal, a

special needs teacher, a science teacher, an English teacher and a visual arts teacher. The teachers were interviewed in their school at a time that was convenient to them. Each teacher completed the survey and was then interviewed. Teachers were asked to provide comments on the layout of the survey, the time taken to complete the survey and any additional information they considered relevant. In addition they were interviewed in order to build on the information that was provided through completion of the survey.

The demographics from the original research entitled, “Preservice Teacher Preparations in Meeting the Needs of Gifted and Other Academically Diverse Students” (1995), had previously been edited for relevance to the Australia context and expanded to elicit additional information. As a result of the pilot study there were no changes made to either the demographic section or the instrument itself. In addition to information regarding gender, age, qualifications, position within the school, number of years teaching, subject area and education system there were a number of questions that requested information about provisions and responsibilities in schools for gifted students and students with a learning disability. The interviews, conducted after completion of the surveys, were semi-structured with open-ended items, and as a result of the pilot study some items were edited for the research project. The following questions were eliminated:

- *To what extent does the curriculum influence your identification of students with diverse needs?*
- *To what extent does the orientation to the nature and needs of academically diverse learners and strategies for meeting their needs affect your identification of these students?*

Other questions were merged or amended. These included the following:

- *How is gifted defined in your school and what is in your school’s gifted policy* amended to *what information is in your school’s gifted policy?*
- *How would you define a gifted student, what is your understanding of gifted students and what criteria would you use to identify a gifted student*

amended to you have been asked to nominate a student/s in your class/es for a gifted program that is being run in your school. What would you look for in the students you would select for the program?

- *How would you define a student with a learning difficulty amended to a student/s in your class/es requires a teacher's aide. What was it about the student/s that made you feel they would benefit from an aide?*

An additional question was considered: *what would be the impact on you and the way you teach in your classroom if you had a student who had been identified as gifted with a learning disability?*

As there were only six participants in the pilot study no formal analysis of the survey was undertaken.

3.4.2 Site

Eleven schools were selected to participate in the research using purposive sampling (Kemper, Stringfield & Teddlie, 2003). In order to achieve a representative sample, schools from all education systems were targeted in addition to secondary and primary schools, comprehensive and selective high schools, and schools with opportunity classes. The schools were selected from within a metropolitan New South Wales Department of Education and Training (NSW DET) School Education Area. Selective high schools and schools with opportunity classes were targeted in addition to mainstream primary schools and comprehensive high schools. The Catholic Education Office (CEO) schools were also located within the same metropolitan area. Two selective high schools, one school with opportunity classes in addition to mainstream classes, one comprehensive high school and two mainstream primary schools from the NSW DET participated in the research. Opportunity classes are for academically gifted students in years five and six. These schools are located within a number of NSW primary schools. Not all primary schools have opportunity classes. Selective high schools provide an environment for highly achieving academically gifted students. Students in selective high schools and opportunity classes have been identified as gifted and have gained entry through a combination of testing and school grades. Schools within Sydney's

CEO; two comprehensive high schools and two mainstream primary schools, and one independent Kindergarten to Year 12 School were also included. The purposive sampling ensured that a broad range of educational contexts was drawn upon.

3.4.3 Sample

Teachers and school counsellors from schools in a NSW DET School Education Area in metropolitan Sydney, Australia were surveyed to ascertain their attitudes to, and knowledge of gifted students and students with learning disabilities. In order to maximise a cross-section of teachers and school counsellors, eleven purposively selected schools were invited to complete the survey. On completion of the survey, teachers and school counsellors were asked to indicate whether they were prepared to be interviewed. Of the twenty eight teachers who nominated to be interviewed 11 were blindly selected and stratified for gender balance, a cross-section of primary and secondary schools in addition to selective, mainstream and comprehensive schools. Eight teachers' interviews were analysed in-depth. To manage the amount of data collected, this number was sufficient to capture the range of views expressed by the teachers across the various settings. The teacher interviewees represented NSW DET, CEO schools and an independent school. Additionally the teachers taught either at the primary or secondary level; in mainstream or selective classes; and were either classroom teachers or administrators who also taught. Teachers from these schools were selected as they were representative of large and small schools in an Australian city.

3.4.4 Instrumentation and Data Collection

Teachers and school counsellors were surveyed using the Survey of Practices with Students of Varying Needs (SOP). The SOP appears in Appendix B. This instrument was originally designed and used by The National Research Center on the Gifted and Talented (NRGCT) (1995) as part of a research project entitled, "Preservice Teacher Preparation in Meeting the Needs of Gifted and Other Academically Diverse Students". The SOP was developed to assess attitudes and beliefs about academically diverse learners, and differentiated instruction appropriate for meeting their needs (Tomlinson, Callahan, Moon, Tomchin,

Landrum, Imbeau, Hunsaker & Eiss, 1995). The SOP was used for this research as it provided data on teachers' and school counsellors' attitudes to not one specific group, but rather to academically diverse learners. Other surveys have analysed teachers' attitudes to just one specific population of learners (see, for example, Gagné & Nadeau, 1991; Jobe, Rust & Brissie, 1996).

The SOP also provided an indication of teachers' confidence at meeting these students' educational needs, and different strategies they would consider implementing in order to do so. This information was considered important by the researcher as it is teachers and school counsellors who have the greatest opportunity to identify students with diverse needs within the school environment. As this research focused on gifted students with a learning disability, it was important to consider teachers' and school counsellors' knowledge and attitudes to gifted students and also students with a learning disability.

The SOP consisted of four parts. Part 1 consisted of 35 items addressing the knowledge and attitudes of teachers towards gifted learners and struggling learners. Additionally the SOP considered the implementation of differentiation in classroom practices in order to meet the needs of academically diverse learners. It utilised a 5-point Likert scale ranging from strongly agree to strongly disagree. A Likert scale produces *'more homogeneous scales and increases the probability that a unitary attitude is being measured and therefore that validity (construct and concurrent) and reliability are reasonably high'* (Burns, 1998, p.461).

In Part II of the SOP, teachers were asked to reflect and rank from one to three the amount of time and attention they gave to the groups of average, special education students and gifted students respectively, with one being the greatest amount of time and attention, and three the least amount of time.

Part III asked respondents to rate on a 5-point Likert scale ranging from no confidence to very confident, their ability to:

- adapt their lessons to meet the needs of gifted learners;
- adapt their lessons to meet the needs of remedial learners;
- accommodate varying levels of ability in their class;

- assess where students were and designing appropriate lessons;
- individualise instruction to meet the needs of gifted learners;
- individualise instruction to meet the needs of remedial learners;
- identify gifted students; and,
- identify remedial students.

In Part IV, respondents were asked to nominate which of 14 specific techniques, activities or instructional strategies they thought they would use in the classroom with gifted, average and special education students.

The SOP had been used to compare the attitudes to gifted, average and learning disabled students of pre-service teachers at various stages of their training. It had also been used to compare the attitudes to gifted, average and learning disabled students of pre-service teachers to that of experienced teachers within the education system in the United States. It had not been used to study the attitudes of experienced teachers and school counsellors to gifted, average and learning disabled students. It is an appropriate instrument to use for this research as it is an instrument which had been used to study the effect of teacher training on attitudes to gifted, average and learning disabled students. It had not been used to study the effects of teachers' attitudes and knowledge as possible barriers to the identification of gifted students with a learning disability. The statements in Part I of the SOP are relevant to Australia as they are general statements that are relevant to meeting the needs of gifted, average and learning disabled students in the educational setting.

Following collection and analysis of the surveys, 11 teachers and school counsellors who agreed to be interviewed were contacted and if they were still agreeable to be interviewed a time was arranged. All the teachers were interviewed in their schools. As indicated previously, only eight of the teachers' interviews were analysed in depth. This was in order to gain a cross-section of teachers across all education systems, representation of primary and secondary schools, selective high schools and schools with opportunity classes, a gender balance and the range of views expressed by all the teachers interviewed. The interviews were semi-

structured and went for approximately an hour each. The questions that guided the interviews were:

1. Tell me about the class/es that you teach.

Prompt – Tell me about some of the positives about your class/es.

2. Schools have policies for everything; could you tell me about some of the information that is in your school's gifted policy?

3. You have been asked to nominate a student/s in your class/es for a specialist gifted program that is going to be run in the school. What would you look for in the student/s you select for the program?

Prompt – Can you describe a student who you would have considered gifted?

4. Imagine you have requested an aide for a student in your class/es, could you tell me what it was about the student that prompted you to ask for an aide?

5. You have been told that you have a student in your class who has been identified as gifted but also has a learning disability. What do you think you might do in the classroom to ensure that this student was catered for?

Prompt – how would you go about sourcing additional information or resources if you had not experienced this situation before?

6. How would you assess your effectiveness at identifying a student who is gifted with a learning disability?

Prompt – what would you do in the classroom to facilitate identification of these students?

The interviews were digitally recorded and later transcribed. Field notes were taken at each interview.

3.4.5 Procedure

Prior to beginning the research in schools and with participants, ethics approval was sought from the university, the NSWDET and the CEO. All applications except the university application were submitted online. A separate ethics application was not required by the independent school. Once ethics approval had been granted, eleven schools, including NSW DET, CEO and independent schools were sent letters of invitation to participate, consent forms and participation information sheets for teachers and school counsellors (see Appendix C). Schools were selected using purposive sampling (Kemper et al. 2003) in order to obtain a cross-section of schools. Selective high schools, schools with opportunity classes as well as comprehensive and mainstream schools, within a Sydney Metropolitan School Education Area in Australia were included. These schools were then contacted a week later to ascertain whether they were interested in participating in the research. A number of schools declined the invitation and consequently additional schools were then sent invitations. As the researcher intended sending out 400 surveys, based on the number of staff in each school, eleven schools participated in the research.

The researcher made an appointment with the principals of each school and visited the schools to deliver the surveys and explain more fully what was required and to respond to any questions. Some schools requested that the surveys be delivered prior to staff development days as this provided both opportunity and time for the teachers to complete the survey. Staff development days occur at the beginning of each of the first three school terms and are pupil free days. Where this process was instigated the return rate was higher than at other schools. Two weeks after the surveys were delivered the researcher rang the schools to follow up on the response. At the follow up phone call a time was arranged to collect completed surveys or a longer time frame to complete the surveys was negotiated. Fortnightly contact was made with the schools until all possible surveys were collected. One school did not distribute the surveys and after a number of phone calls and a visit, eventually stated that they did not want to be part of the research. As a consequence an additional school was identified.

Teachers and school counsellors were asked to nominate on their consent form whether they were prepared to be interviewed. A total of 28 teachers agreed to be interviewed. A cross-section of participants from selective high schools, schools with opportunity classes, comprehensive high schools and mainstream primary schools and an independent school was selected. Additionally a balance of male and female participants was achieved for a total of eleven teachers. Following analysis of the surveys, the eleven selected teachers who had indicated they were prepared to be interviewed were contacted. Confirmation to be interviewed was gained and a time arranged for the interview. The researcher visited and interviewed each of the teachers in their schools.

Teachers and school counsellors were interviewed to gain an in-depth knowledge of their attitudes to, and understanding of, students with diverse learning needs. The aim of the interviews was to build on the information gained from analysis of the surveys. Interviewing provided the opportunity to probe teachers' and school counsellors' knowledge and perspective on characteristics, methods of identification, and educational practices for meeting the needs of students who are gifted with a learning disability.

The researcher used a semi-structured interview strategy, interviewing for approximately an hour at a time with the possibility of a follow-up interview or discussion. All interviews were digitally recorded for later transcription and, additionally, field notes were taken during the interviews. Interview questions were as previously noted.

3.4.6 Data Analysis

3.4.6.1 Survey

The data from the surveys were entered into a computer using the 'Statistical Package for Social Sciences' software (SPSS) which was then used for data analysis. The data were coded and recoded for final analysis (see Appendix D for codebook).

For the demographics, the frequencies and percentages of participants' responses were calculated for the variables of: age, number of years training, professional qualifications, school position held, whether the school had provisions for gifted or learning disabled students, whether the respondent had responsibility for gifted or learning disabled students, and whether formal study had been completed in gifted or special education. Data for gifted and learning disabled provisions, responsibility for gifted or learning disabled students and formal study in the field of gifted or special education were separated into two groups – one including and another excluding selective high schools.

Each of the four parts of the SOP were analysed separately. Two subscales were formed from the 35 items in Part I, a gifted subscale and a learning disability subscale. The subscales were based on, but not exactly the same, as those used in the original research. The original research was undertaken to study pre-service teachers' development of their awareness of students with diverse needs and their ability to meet these students' needs. Personal communication with the original researchers highlighted that there were some problems with reliability and as a result this research only used Part 1 of the survey to assess teachers' knowledge of and attitudes to gifted students and students with a learning disability and established separate reliability for the subscales used in this research.

Means and standard deviations for each item in the two sub-scales were calculated. A two-way between groups analysis of variance was conducted to explore the impact, if any, that the age of the teachers and their work environment – selective high school versus mainstream schools — had on teachers' and school counsellors' knowledge of and attitudes to gifted students and struggling learners. Respondents were divided into two groups according to their age (Group 1 - teachers <40 years of age; Group 2 - teachers >40 years of age). Two groups were also formed according to whether they taught at a selective high school or not (Group 1 – from a selective high school; Group 2 – all other schools).

A one-way ANOVA was conducted to compare the gifted sub-scale scores for teachers who had formal training in gifted education and teachers who had no

formal training in gifted education. Similarly a one-way ANOVA was conducted to compare the effect of having formal training in learning disabilities.

For Part II of the SOP, percentage rankings were calculated for the amount of time the teachers spent with each of the groups, special education, average and gifted learners. In Part III where teachers were asked to rank how confident they felt adapting and individualising lessons and identifying gifted and remedial learners, means and standard deviations were calculated. Percentages and rankings were calculated for each of the strategies in Part IV of the SOP where teachers were asked to nominate classroom strategies that they would consider using for gifted, average and special education students.

3.4.6.2 Interviews

Eleven teachers were initially interviewed in their school at a time that was convenient to them. In order to have a balance of primary and secondary teachers, male and female, selective and opportunity schools and across education sectors, only eight interviews needed to be analysed in-depth. As noted earlier this number was also sufficient to capture the range of views expressed by the teacher interviewees. All the interviews were digitally recorded and transcribed later. In addition field notes were taken during the interviews. As soon as possible after the interviews the researcher listened to the recordings and processed the field notes reflecting on any points of relevance, further information required and initial conclusions.

As a result of preliminary readings, the transcribed interviews were initially categorised by the researcher, and the different emerging themes were highlighted in different colours. These different themes were then categorised and assigned a code. This data was then coded and entered into a table. The codes for each theme can be seen in Table 3.1.

Table 3.1 Codes for Teacher Interviews

Code	Description
UNDACH	Underachievement
ACH	Achievement
POL	Policy
FAMCIR	Family circumstances
CLASSPG	Classroom practices gifted
SCPG	School practices for gifted
IDG	Identification/characteristics of gifted
EFFAP	Effect of appropriate program
BARIDG	Barriers to identification of gifted
TEACHP	Teacher perceptions
IDGLD	Identification/characteristics of gifted with a learning disability
INTGLD	Interventions for GLD
IDLD	Identification/characteristics learning disabled
CLASSPLD	Classroom practices learning disabled
BARLD	Barriers to support for LD
CONFIDLD	Confidence to identify LD
PARINT	Parent interaction
BARPGALD	Barriers/dissatisfaction to programs for gifted and LD

3.4.7 Limitations

Despite the researcher's best efforts to encourage completion of the surveys, the return rate was only 27.3%, affecting the reliability of the quantitative data. Although 2.8 times as many surveys were provided to secondary schools the return rate was similar for both primary (29.6%), and secondary schools (28.8%), with the return rate for the independent school 21%. As 2.7 times as many surveys were

returned from secondary schools than primary schools the bias is towards the research being more relevant to secondary schools.

This imbalance was addressed when selecting teachers to be interviewed. Responses from teachers during the interviews may have reflected their frustrations with school policy and hierarchy and hence presented a biased response.

The teachers who completed the surveys and nominated to be interviewed may be biased towards gifted education as they may have felt that they had knowledge about gifted education, and teachers who felt they did not have any knowledge of gifted education may not have nominated.

As previously noted, personal communication with the original researchers highlighted that there were issues with the reliability of the SOP. This issue was also noted in an Honours Thesis titled “Preservice Teacher Preparation in Meeting the Needs of Gifted and Other Academically Diverse Students” (Ferrara, 2006). Woodcock (2008) used 15 of the statements in his research and after further testing established an alpha coefficient of .70 for five items related to attitudes towards students with learning disabilities. For this research separate reliability was established for the gifted subscale and the learning disability subscale that was used in this research.

3.5 PHASE 2 - Case Studies

3.5.1 Sample

Participants in the case studies were students who had been identified as gifted with a learning disability and their parents/caregivers. In addition, two teachers and one speech therapist who had worked with one of the student participants agreed to participate and be interviewed. These professionals were approached by the mother of one of the participants and asked if they were prepared to participate. They agreed to be part of the research project and their contact information was provided to the researcher by the parent. Other participants did not want the schools their children attended approached. One case study participant provided their speech

pathologist's contact details as the researcher needed to clarify information about specific testing but this professional did not want to be interviewed.

The first case study was a young boy, Thomas, who lived with his older sister and mother and was in Year two at the time of the research. His mother became aware of giftedness as a result of behaviours his older sister demonstrated. She considered that her children were bright but not gifted. She was aware after he started school that he had some difficulties with reading but it was his unacceptable behaviour at school that led his mother to investigate further in order to understand the issues he was experiencing. He had even considered, at the age of 7, stealing a car with one of his friends.

The second case study was of Adam and Mark, two brothers who shared similar disabilities in addition to each having distinct disabilities. They both attended a NSW DET mainstream primary school and were not formally identified as gifted with learning disabilities until after starting school. The parents initially considered that one of the boys had a learning disability and the other was gifted. The possibility that both boys could be gifted with a learning disability was not initially considered.

Case study three was of a girl, Emma, who at the time of the research attended an independent co-educational school in the Sydney Metropolitan area in Australia and was in primary school. Initially her parents had no idea that she was either gifted or had a learning disability. It was not until after she started school and was not reading at the same level as her cohort that her parents investigated why. This has led to over 50 various assessments being conducted in order to establish her disability and additionally she has participated in several intervention programs. She is an only child.

Case study four was of a boy, David, whose parents were aware even before he started school that he demonstrated insights and understanding well beyond his years. It was not until he attended school that he demonstrated problems in some areas of his learning. He currently attends a comprehensive high school in a Sydney

Metropolitan area in Australia and lives at home with his parents and a younger sister.

The final case study was of Scott, a young man who had completed his schooling and achieved entrance to university despite demonstration of such severe dyspraxia that he was unable to dress himself. He was the middle child of three boys and lived at home with his parents and younger brother. His mother was aware from birth that he had problems but was not aware until he was assessed at school that he was gifted.

3.5.2 Instrumentation and Data Collection

The specific data collection techniques used in this study included qualitative observation, semi-structured interviews conducted informally, and the collection of related documents. Qualitative observation '*involves observing all relevant phenomena*' (Johnson & Christensen, 2004, p. 188) and takes place in the natural setting. In order to add to the information gained from the interviews the researcher made observations of the participants' behaviour. This provided additional non-verbal information. For example, one participant when responding to a question from the researcher, looked furtively around the room to ascertain whether either parent was within hearing distance before answering the researcher. Notes of observed behaviours were made at the time of the interviewing.

Open-ended questions within semi-structured interviews provide many advantages.

They are flexible; they allow the interviewer to probe so that she may go into more depth if she chooses, or to clear up any misunderstandings; they enable the interviewer to test the limits of the respondent's knowledge; they encourage co-operation and help establish rapport; and they allow the interviewer to make a true assessment of what the respondent really believes. (Cohen & Manion, 1997, p. 277)

This research sought to understand why students were not being identified by schools as being gifted with a learning disability and therefore sought to learn the

characteristics and the incidents that alerted the parents to the fact that their child was having problems. Additionally, understanding from the student perspective provided insights into their world and the issues they were dealing with. Interviewing allowed the parents and the students to reflect on what they had experienced and questions and statements provided catalysts to recall what processes had been undertaken to try and achieve an appropriate education. Some examples of questions that were asked of the parents were:

- Tell me about your child.
- How was your child identified as gifted with a learning disability?
- What has been the effect on the family?

And some questions that were asked of the students:

- Tell me about school and what you like and dislike about it.
- What do you find easy to do, difficult to do?
- Describe your ideal teacher/school/classroom.

Interviews were also conducted with previous teachers and a speech therapist of one of the participants. Some of the questions asked were:

- Tell me about Scott. What was he like in the classroom?
- How did you identify that he was gifted when other teachers had targeted him as only having a disability?
- Why did you advocate for Scott and request that he be allowed to attend the school for longer than the usual designated time?

Official documents were provided by the parents of the participants and included reports and test results from school counsellors, psychologists, occupational therapists, speech therapists, physiotherapists, pediatricians, alternative therapists, general practitioners, teachers, optometrists, hearing specialists and educational consultants. These documents provided official evidence of identification of the individual participants as gifted with a learning disability. Artefacts in the form of students' work samples were also collected, for example, the original of a handwriting assessment undertaken by one of the student participants. Information regarding all testing and interventions is included in the appendices.

3.5.3 Procedure

Participants for the case study were recruited through advertisements placed in the New South Wales Association for Gifted and Talented Children Inc (NSWAGTC) journal 'Gifted' and the Specific Learning Difficulties Association of NSW (SPELD) newsletter.

The advertisement placed in the 'Gifted' journal was:

A common belief is that a student is either gifted or learning disabled, not both. This is a difficult concept for parents and teachers to understand. This research will attempt to understand the barriers to identifying these students. Currently there is a paucity of Australian research on this population of students.

You are invited to participate in a doctoral research project investigating the identification of gifted students with a learning disability. The research will involve an interview of students (maximum of three 30 minute interviews) from years K – 12. It will also involve interviews with students' families/caregivers (maximum of three 30 minute interviews) as well as access to personal records. This project has been reviewed by the University of Wollongong Human Ethics Research Committee.

If you are interested in further information please contact Catherine on 02 4221 4197 or email cmw959@uow.edu.au

The advertisement placed in the 'SPELD' newsletter was:

Suitable students and their parents are invited to participate in a doctoral research project investigating the identification of gifted students with a learning disability. A common belief is that a student is either gifted or learning disabled, not both. This research will attempt to understand the barriers to identifying these students. The research will involve:

- *Interviews with students from years K-12 (maximum of three 30 minute interviews)*

- *Interviews with students' families/caregivers (maximum of three 30 minute interviews) as well as access to relevant professional reports.*

This project has been reviewed by the University of Wollongong Human Ethics Research Committee. For further information please contact Catherine on 02 4221 4197 or email cmw959@uow.edu.au

A number of people responded to the advertisements. The majority of responses were from the advertisement placed in the NSWAGTC's journal. Each respondent, if the child met the criteria of having been identified as gifted with a learning disability, was, after email or phone contact, provided with consent forms and participation information sheets. Some respondents were not suitable participants as they did not meet the requirement of formal identification through testing and assessment. Respondents were given the opportunity to ask questions and request further information about the research. Respondents who agreed to participate by returning signed consent forms to the researcher were contacted by the researcher and negotiations commenced regarding the documentation available to the family, and the method by which it would be provided to the researcher.

A total of 12 respondents were suitable participants and provided documentation and artifacts. One of the 12 respondents was not considered for detailed analysis as he was the same age as the female respondent and three were at similar stages in high school, and only one was targeted as the respondent represented the early stages of high school. Two respondents were female but as one lived in far Western NSW and was not easily accessible it was decided not to use that participant. Another respondent withdrew as the family moved interstate and was no longer accessible.

Following analysis of the documentation provided, a time and place was organised through phone or email contact, to interview the students and their families. All the families agreed to be interviewed in their homes with students being interviewed whilst a parent was present within the home but the parent did not sit in on the interview. A total of nine parents and students were interviewed, including two students who were siblings. In two cases, both parents were interviewed; in two

cases only the mother was available and interviewed; and one case was a single parent who was interviewed. One student would not talk to the researcher as a result of his traumatic experiences at school, which eliminated one case study. Of the remaining participants, six – five boys and one girl - were selected for detailed analysis, as they covered the range from Kindergarten to a student who had just completed schooling. Initially parents consented to three 30 minute interviews. When collecting the data, the researcher only met once with each family for approximately two hours and obtained additional information after the interviews by either phone contact or email.

The interviews were unstructured, with the researcher providing prompts at the beginning of the interview and throughout the interview, building on the information being supplied and allowing the parents to provide information they considered relevant. Some of the prompts used were:

For Parents

- Tell me about your child.
- When was your child first identified as gifted with a learning disability?
- Who identified the disability or giftedness?
- How was your child identified as gifted with a learning disability?
- What strategies have you implemented to support your child?
- Has the school/ teachers addressed the issues your child has at school, with school work, and how have they done this?
- What has been the effect on the family?

For Students – depending on the age of the child

- Tell me about school and what you like and dislike about it.
- What do you find easy to do, difficult to do?
- Describe your ideal teacher/school/classroom.
- What do you do outside school?
- Can you give me an analogy of how you feel about yourself?

- If you had the option to have input into work undertaken in the classroom and assignments set for you, what sort of things would you tell the teacher you would like?

In each case the parent/s were interviewed first followed by the student. After interviewing the student, the researcher in three of the cases sought comment from the parents on some of the responses the student had given. For example, one student stated that he hated homework and the researcher asked the parents whether this was also their understanding of the student's attitude to homework.

3.5.4 Data Analysis

Initial data analysis focused on the documents provided by the families. The documents included IQ reports, reports from optometrists, psychologists, occupational therapists, speech therapists, physiotherapists, educational consultants, school counsellors and teachers. The reports provided results of tests and assessments undertaken as well as recommendations for various interventions for the student. Each participant's documents were located in individual folders.

The information in the reports was divided into themes and the quantitative data collated into tables for each participant. The tables were divided into separate sections representing the different types of assessments and the relevant theme (see Table 3.2).

Table 3.2 Documentation provided by participants

Theme	Code	Type of assessment/ intervention	Date of assessment/ intervention	Results
Identification	ID	IQ assessments Occupational therapist reports Physical therapist reports Optometry reports School Counsellor reports Speech therapy reports		
Interventions	INT	Vision programs Sound therapy Occupational therapy Physiotherapy		
Effects on student learning	EFSL	Special provision in schools or home		
School	SCH	School reports Other reports from school		
Recommendations	REC	Speech therapy Occupational therapy Psychology Classroom provisions		

Following the initial analysis of the provided documents, the researcher either requested additional information and clarification from the parents, or contact was made with the participant to organise a date and time to interview the parents and students.. These notes consisted of observations of the behaviour of the participants, general impressions and notes of actual participant responses.

Following the interviews the researcher listened to the recordings and made additional notes. These notes consisted of a summary of the interviews, initial analysis and understandings of the information provided, initial conclusions and further questions or information to be sourced from the participants. On the initial reading of the transcriptions, additional notes were made in the margins. These again were queries requiring additional information or interpretations of the information provided. A second reading identified themes which were coded (see Table 3.3).

Table 3.3 Codes for Analysis of Participant Interviews

Students	Code	Data
Disability	DIS	
Resources	RES	
School attitude	SCHATT	
School behaviour	SCHBEH	
Classroom accommodations/lack of	CLSACCL	
Ideal teacher	ITECH	
Learning skills/strategies/self awareness	LSKSSA	
Alternative coping strategies	ALTSTRA	
Parents		
Identification	ID	
Parent reaction	PR	
Teacher /school input/response	TSCHIR	
Testing/assessment	TEST	
School achievement	SCHACH	
interventions	INT	
Disability	DISP	
Child behaviour	CHIB	
Independent help	INDH	
Support	SUP	
Effect on family	EFAM	
Barriers to identification	BARID	

In order to improve the validity of the analysis of the various data collection methods, triangulation was used (Cohen & Manion, 1994). Triangulation provides for alignment and convergence of the data. Four of the case studies were sent to the participants for member checking. As a result additional information was provided. Official documentation provided by the participants confirmed the information that was provided by the participants during interviews.

3.5.5 Limitations

A limitation of this research project is a gender imbalance. Only two possible participants were female, resulting in a greater number of boys and their families being interviewed. However, this gender imbalance seemed to reflect the research undertaken by Shaywitz, Holahan, Freudenheim, Flethcer, Makuch and Shaywitz, (2001). In their research which considered the possibility that higher IQ students exhibited behaviours of those with learning disabilities, only boys were selected, as very few girls had been identified as having a learning disability. Phipps (1982) stated that as many as 85% of students receiving special programs in public schools, including those who are learning disabled and behaviourally disordered, were boys. Coutinho and Oswald (2005) noted in their research that boys are twice as likely as girls to be identified with a learning disability and Nass (1993) noted that '*boys more often than girls are affected by cognitive developmental disorders of childhood*' (p. 61).

A disadvantage of interviewing is that it is prone to subjectivity and bias on the part of the interviewer (Cohen & Manion, 1997, p. 272). All documentation was provided to the researcher by the parents and whilst most of the participants were open about this information, the researcher is aware that there were occasions where information was blacked out or not provided. Some of the information provided by the families particularly during the interviews was their memories and recollections of what occurred and may have not been factual. As the data provided in the documents came from different assessors the method of reporting differed between assessors as did the level of information provided.

Not all education sectors were represented in the sample that was interviewed and therefore the information provided by the parents that was relevant to schooling was applicable to only NSW DET schools and an independent school. The researcher's bias was overcome through triangulation with the use of interviews of both parents and students, in addition to the documentation provided by the participant families and in one case, teachers and a therapist who had worked with the student. Additionally four of the case study write ups were sent to the participants for member checking.

CHAPTER 4

RESULTS OF PHASE 1

EDUCATION PROFESSIONALS, THEIR KNOWLEDGE and ATTITUDES

4.1 INTRODUCTION

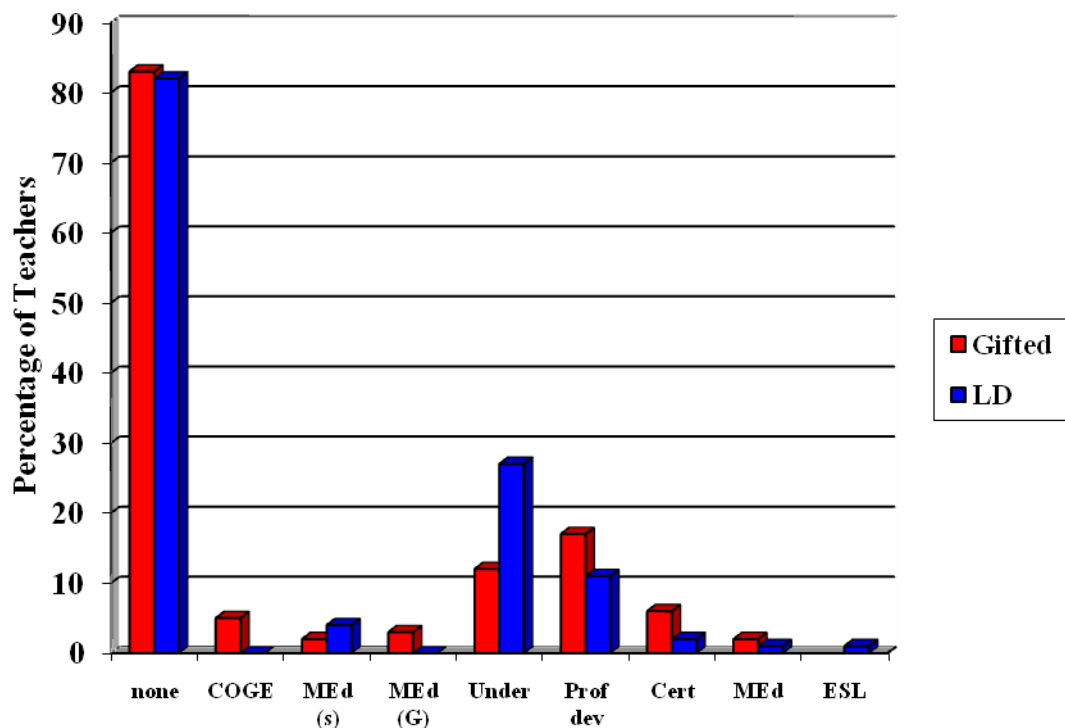
In this chapter the findings of a survey of teachers' attitudes towards, and knowledge of, gifted students or students who have a learning disability will be presented. In addition, teachers' perceptions of their ability and confidence to identify and meet these students' specific needs using a variety of methods were investigated. An analysis of teacher interviews which were conducted in light of the results from the surveys will also be presented.

The Survey of Practices with Students of Varying Needs (SOP) was used to survey teachers and school counsellors working in the New South Wales Department of Education and Training (NSWDET) schools. The schools included two selective high schools, one school with opportunity classes (years 5 & 6), one comprehensive high school and two mainstream primary schools. Two comprehensive high schools and two mainstream primary schools from Sydney's Catholic Education Office (CEO) and one independent Kindergarten to Year 12 school were also surveyed. In total 479 surveys were sent out and 131 were completed, for a return rate of 27.3%. These schools were selected as they provided a representative sample of schools in any Australian city. Following analysis of the survey, a stratified sample of 11 teachers and school counsellors were selected to be interviewed in order to obtain more comprehensive and detailed data.

4.2 TEACHER SURVEYS

4.2.1 Demographics

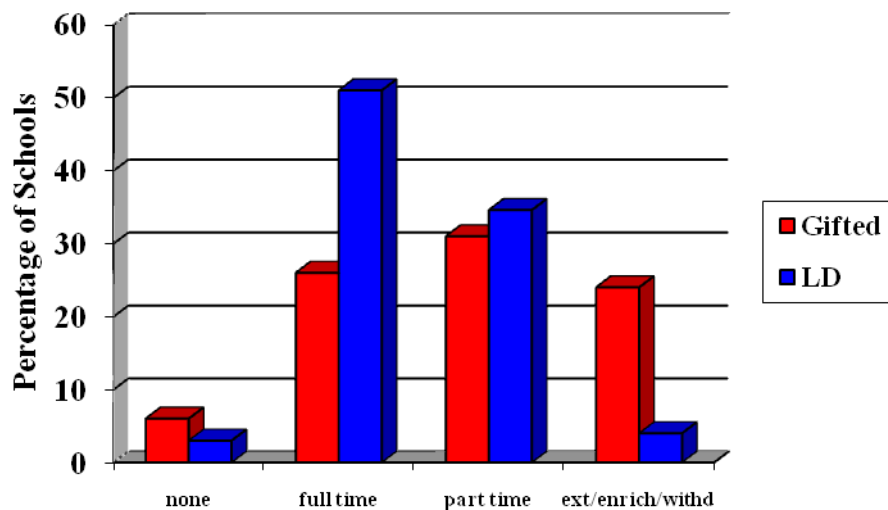
More than half the teachers fell into the 40+ age group with 98 having either a bachelor's degree, bachelor's degree with honours or a bachelor's degree with a graduate diploma. Twelve teachers (9.2%) studied one subject in gifted education at the undergraduate level. This is in direct contrast to undergraduate study in learning disabilities, where 27 teachers (20.6%) studied a subject related to learning difficulties in their undergraduate degree. Two teachers had undertaken a gifted subject, and one teacher a learning disabilities subject in their Master of Special Education degree. The majority of teachers including those from selective high schools had no formal training in either gifted education or learning disabilities (see Figure 4.1).



NOTE: COGE = Certificate of Gifted Education, MEd(s) = Master of Education (Special Education), MEd(G) = Master of Education (Gifted Education), Under – Undergraduate subject, Prof dev = Professional development, Cert = Graduate Certificate, MEd/unit = Master of education subject or unit, ESL = English as a second language.

Figure 4.1 Formal Study in Gifted Education or Learning Disabilities

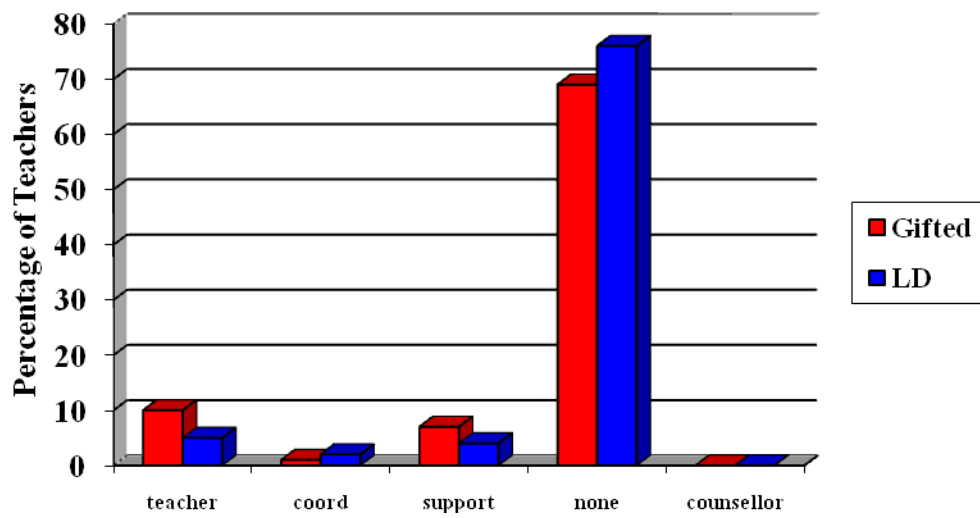
When selective high school data were excluded, the full time provision in mainstream and comprehensive schools for gifted students is half that for students with learning disabilities (see Figure 4.2). Selective high school data were excluded because all teachers in these schools had responsibility for gifted students as the students were all identified as gifted. In mainstream and comprehensive schools the main provision for gifted students took the form of part time provision or enrichment, extension work or withdrawal programs.



NOTE: ext/enrich/withd = extension/enrichment/withdrawal

Figure 4.2 Gifted and Learning Disability Provisions Excluding Selective High Schools

Teachers were asked to indicate whether they held a position of responsibility for gifted or learning disabled students (see Figure 4.3). When the rate of responses from teachers in selective high schools and schools with opportunity classes is considered, the number of teachers who have responsibility for gifted students is high, but eliminating selective high school responses substantially reduced the rate of responsibility. The most common response was that the participants had no responsibility for gifted or learning disabled students. See Tables 4. 1, 4.2, 4.3 and 4.4 for all results related to the demographics of the survey.



NOTE: coord = coordinator; support = support teacher

Figure 4.3 Responsibilities for Gifted and Learning Disabilities excluding Selective High Schools

Table 4.1 Teacher Demographics (n = 131)

Variable	Frequency	Percentage
Age		
20-29	13	9.9
30-39	26	19.8
40-49	46	35.1
50-59	43	32.8
60+	3	2.3
Number of years teaching		
0-10	37	29.1
11-20	34	26.8
21-30	43	33.9
30+	13	10.2
Qualifications		
Teaching diploma	23	17.6
Bachelor's degree	75	57.3
Master's degree	24	18.3
Doctorate	3	2.3
Other	6	4.6
School Position		
Teacher	95	72.5
Administrator & teacher	27	20.6
Advisor & teacher	6	4.6
Counsellor	1	0.8
Administrator & adviser	1	0.8
Principal	1	0.8

Table 4.2 Formal Study in Gifted Education or Learning Disabilities

Variable	Frequency	Percentage	Frequency	Percentage
Formal gifted study	Including SHS		Excluding SHS	
None	83	63.4	53	60.2
COGE	5	3.8	5	5.7
Master of Special Education	2	1.5	2	2.3
Masters of Gifted Education	3	2.3	3	3.4
Undergraduate subject	12	9.2	8	9.1
Professional development	17	13.0	9	10.2
Mini Certificate	6	4.6	6	6.8
Masters unit	2	1.5	1	1.1
Formal LD study				
None	82	62.6	49	55.7
Master of Special Education	4	3.1	4	4.5
Undergraduate subject	27	20.6	19	21.6
Professional development	11	8.4	10	11.4
Mini Certificate	2	1.5	2	2.3
Masters unit	1	0.8	0	0
ESL	1	0.8	1	1.1

As can be seen in Table 4.2 there was some interesting differences when including or excluding selective high school data. A greater number of teachers, when including selective high school data had no training in gifted education. More teachers had training in gifted education when selective high schools was excluded. This pattern was also true with respect to teachers who had qualifications in learning disabilities. Additionally, a greater percentage of non-selective high school

teachers have post graduate qualifications or additional training in gifted education. Teachers teaching in a specialist high school for gifted students had fewer qualifications than those who were not teaching in a selective high school. This is a real concern as the expectation would be that as selective high schools are specialist schools educating students who have been identified as gifted, the teachers should have a greater rate of training in gifted education.

Table 4.3 Gifted and Learning Disability Provisions

Variable	Frequency	Percentage	Frequency	Percentage
Gifted provisions	Including SHS		Excluding SHS	
None	6	4.6	6	6.8
Full-time	62	47.3	26	29.5
Part-time	35	26.7	31	35.2
Enrichment/extension/ withdrawal	27	20.6	24	27.3
LD provisions				
None	18	13.7	3	3.4
Fulltime	62	47.3	51	58.0
Part time	42	32.1	29	33.0
Withdrawal	8	6.1	4	4.5

Table 4.4 Responsibility for Gifted and LD

Variable	Frequency	Percentage	Frequency	Percentage
Gifted provisions	Including SHS		Excluding SHS	
Teacher	46	35.1	10	11.4
Coordinator	4	3.1	1	1.1
Support person	9	6.9	7	8.0
None	70	53.4	69	78.4
Counsellor	1	0.8	0	0
LD Responsibility				
Teacher	5	3.8	5	5.7
Coordinator	3	2.3	2	2.3
Support person	9	6.9	4	4.5
None	112	85.5	76	96.4
Counsellor	1	0.8	0	0

Tables 4.2 and 4.3 also highlighted differences in the data when including and excluding selective high schools. A greater percentage of schools do not have full time gifted provisions when excluding selective high schools but rather provide for these students on a part time basis and by implementing enrichment, extension and withdrawal programs.

Additionally when selective high school data are excluded most schools do not have a person responsible for either gifted provisions or learning disabilities. In addition there were only ten teachers in the non-selective schools who considered that they had responsibility for gifted students and only five who had responsibility for learning disabled students when selective and non-selective high school data were considered.

4.2.2 Part I

The SOP consisted of four parts. Two subscales were formed from the 35 items contained in Part 1 of the SOP. Part 1 assessed the attitudes of teachers towards

gifted learners and struggling learners and additionally, the implementation of differentiation in classroom practices in order to meet the needs of academically diverse learners.

The two subscales used in this research assessed knowledge and attitudes of teachers and school counsellors towards gifted learners and struggling learners. The gifted learner scale consisted of items 7, 10, 13, 16, 21, 33, and 34, and the struggling learners scale consisted of items 1, 4, 19, 26, and 29 (see Table 4.3). Participants responded to items by using a five-point scale ranging from strongly agree to strongly disagree. The subscales were based on, but not exactly the same as, those used in the original research. The original research was undertaken to study pre-service teachers' development of their awareness of students with diverse needs and their ability to meet these students' needs. Personal communication with the original researchers highlighted that there were some problems with reliability and as a result this research only used Part 1 of the survey to assess teachers' knowledge and attitudes to gifted students and to students with a learning disability, and established separate reliability for the scales used in this research. Cronbach alpha scores of .67 and .64 respectively for the gifted scale and the struggling learners scale established a moderate reliability of the two scales.

Means and standard deviations for the items in each scale were calculated (Table 4.5). Possible ranges for the subscales were from strongly agree to strongly disagree. Negative items were reverse scored. The higher the mean the greater the knowledge of, and more positive the attitude to, gifted students. Teachers' knowledge of, and attitudes to, gifted learners were positive and demonstrated some awareness of gifted education with means ranging from 3.72 to 4.34. With standard deviations ranging from 0.71 to 1.02 some teachers demonstrated uncertainty about their knowledge of gifted students. By contrast, teachers' attitudes to struggling learners seemed to be ambivalent with means ranging from 2.46 – 3.77, and standard deviations suggesting that there were some teachers who had positive attitudes to struggling learners whilst others did not.

Table 4.5 Mean teacher and school counsellor knowledge and attitude towards gifted learners and struggling learners

Statement	Mean	SD
Gifted Scale		
Item 7 – Gifted students will take their regular assignments and make them more challenging on their own	3.72	1.02
Item 10 – An effective way to identify gifted students is to look for students with the highest grades	4.06	0.92
*Item 13 – Allowing gifted students to work on assignments that are different from the rest of the students is playing favourites and fostering elitism	4.34	0.89
*Item 16 – Gifted students need longer assignments since they work faster	4.24	0.71
Item 21 – Gifted students are easy to identify in the classroom	3.95	0.96
*Item 33 – In teaching gifted students, teachers should modify the content only, since all students need to use the same processes and can generate the same projects	3.84	0.96
*Item 34 – Having gifted students work on individual projects or assignments isolates them from the rest of the class	3.85	0.92
*These items were reverse scored i.e. Teachers disagreed with the statement		
Struggling Learners Scale		
Item 1 – A student who is learning disabled will usually be a low achiever in most subjects	3.16	1.16
Item 4 – Remedial students find it difficult to work on their own without teacher direction	3.77	1.09
Item 19 – Remedial students do not do well in most subjects	2.46	1.06
Item 26 – Students who differ markedly in ability from the average learner should be taught in special classes to fully meet their needs	2.98	1.18
Item 29 – Remedial students have difficulty in grasping concepts and need a more fact based curriculum	2.74	1.02

A two-way between groups analysis of variance was conducted to explore the impact that the age of the teachers and their work environment – selective high school versus mainstream — had on attitudes to gifted students and struggling learners. Respondents were divided into two groups according to their age (Group 1 - teachers <40 years of age; Group 2 - teachers >40 years of age). Two groups were also formed according to whether they taught at a selective high school or not (Group 1 – from a selective high school; Group 2 – all other schools). There was no statistically significant effect for either of these factors on attitude towards gifted learners or struggling learners (see Table 4.6).

Table 4.6 Effects of Teachers' Age and Educational Setting on Attitudes to Gifted and Struggling Students

Dependent variable: Gifted Scale				
Source	df	Mean square	F	Sig
SHS	1	34.989	2.526	.114
Age	1	25.562	1.846	.177
Dependent Variable: LD scale				
SHS	1	14.545	1.239	.268
Age	1	27.831	2.370	.126

A one-way ANOVA was conducted to compare the gifted scale scores for teachers who had formal training in gifted education and teachers who had no formal training in gifted education (see Table 4.7). There was a significant difference in scores for teachers who had formal training in gifted education as compared to teachers who had no formal training in gifted education ($F=8.150$, $p < .005$). Similarly a one-way ANOVA was conducted to compare the effect of formal training in learning disabilities (see Table 4.8). No significant effect was found for teachers who were trained in learning difficulties.

Table 4.7 Effect of training on participants' responses to gifted scale

	Sum of Squares	df	Mean Square	F	Sig
Between groups	115.135	1	115.135	8.150	0.005*
Within groups	1822.377	129	14.127		
Total	1937.511	130			

Table 4.8 Effect of training on participants' responses to struggling learners scale

	Sum of Squares	df	Mean Square	F	Sig
Between groups	6.890	1	6.890	.550	.460
Within groups	1603.387	128	12.526		
Total	1610.277	129			

4.2.3 Part II

In Part II of the SOP, teachers were asked to rank from one to three the amount of time and attention they gave to the groups of learning disabled, average and gifted students with one being the greatest amount of time and attention, and three the least amount of time. If teachers felt they spent equal amounts of time with each group they could indicate this by writing 'E' instead of the numbers one to three. As illustrated in Table 4.9, teachers including selective high school teachers responded in the following ways:

- 39.4% ranked average students as number one;
- 32.8% ranked special education students as number one;

- 8.6% ranked gifted as number one; and,
- 22.9% stated they spent an equal amount of time with each group.

These results demonstrated that the greatest percentage of teachers is teaching to the middle and lower levels of the class. Excluding selective high school data decreased the percentage of teachers who ranked gifted students at number one and increased the number who ranked them at number three. These data also showed an increase in the number of teachers who ranked special education students at number one and decreased the number who ranked them third. With this minimal focus on gifted students, teachers will be hindered in their ability to identify gifted students and therefore they would have even greater difficulty identifying students who are both gifted and have a learning disability.

Table 4.9 Percentage Rankings of the Relative Amount of Time Spent with Academically Diverse Learners as Measured by Part II of the Survey of Practices with Students of Varying Needs (SOP)

Rankings	1	Excluding SHS	2	Excluding SHS	3	Excluding SHS
Average students	39.4	38.8	23.6	24.7	11.0	8.2
Special education Students	32.8	35.3	25.8	25.9	14.1	10.6
Gifted students	8.6	5.9	25.0	21.2	39.8	43.5

Note: Rankings ranged from “Most Amount of Time” (1) to “Least Amount of Time (3)

4.2.4 Part III

In Part III teachers were asked to rank how confident they felt:

- adapting their lessons to meet the needs of gifted learners;
- adapting their lessons to meet the needs of remedial learners;
- accommodating varying levels of ability in their class;
- assessing where students were and designing appropriate lessons;
- individualising instruction to meet the needs of gifted learners;
- individualising instruction to meet the needs of remedial learners;
- identifying gifted students; and,
- identifying remedial students.

Response options ranged from 1 (no confidence) to 5 (most confident). Mean responses were calculated for each item (see Table 4.10). Mean scores ranged from 3.37 to 3.76, including selective high school data and 3.40 to 3.77 excluding selective high school data. Excluding selective high school data changed the mean score range only slightly.

Teachers felt some confidence about accommodating various levels of ability, assessing where students are at, designing appropriate lessons, and identifying remedial learners. For the remaining items teachers did not express strong feelings either way. These results conflicted with the results for Part 1 of the survey. Teachers had a positive attitude towards gifted students yet they did not feel confident adapting lessons for them, individualising instruction or even identifying gifted students. Teachers' ranking of confidence levels with respect to remedial learners are in line with their ambivalent attitude towards these students except with respect to identifying these students with which they have indicated some confidence. These results represented conflict with teachers noting that they accommodated various levels of students in their classroom yet they are not confident in individualising instruction for gifted and remedial students. A lack of demonstrated confidence is an indication that gifted and special education students are not being identified and therefore not having their needs met.

Table 4.10 Mean Rankings of Confidence with Classroom Differentiation as Measured by Part III of the Survey of Practices with Students of Varying Needs (SOP)

Skill	Mean	Mean excluding SHS	SD	SD excluding SHS	n	n excluding SHS
Adapting lessons to meet the needs of gifted learners	3.70	3.62	.907	.897	129	86
Adapting lessons to meet the needs of remedial learners	3.47	3.55	.993	1.036	129	86
Accommodating varying levels of ability	3.65	3.69	.913	.906	130	87
Assessing where students are and designing appropriate lessons	3.76	3.77	.846	.85	129	86
Individualising instructions to meet the needs of gifted learners	3.57	3.51	.999	1.082	129	86
Individualising instructions to meet the needs of remedial learners	3.37	3.45	1.020	1.076	130	87
Identifying gifted learners	3.46	3.40	.984	1.032	129	86
Identifying remedial learners	3.68	3.77	.881	.845	130	87

Response options ranged from no confidence (1) to very confident (5)

NOTE – Mean ranges; 1.00 – 1.66 = absolutely no confidence; 1.67 – 2.33 = no confidence; 2.34 – 3.66 = neither confident nor not confident; 3.67 – 4.33 = confident; 4.34 – 5.00 = very confident.

4.2.5 Part IV

In Part IV, respondents were asked to nominate which of 14 specific techniques, activities or instructional strategies they would consider using in the classroom with gifted, average and special education students (see Table 4.11). The table provides results when including and excluding selective high school data.

The three most common strategies teachers reported that they would consider using for gifted students were higher level thinking practices (65.7%), independent study (61.9%) and curriculum compacting (46.3%). Two of these strategies were also ranked in the three most common strategies that teachers would consider using with average students, i.e. higher level thinking practices (42.8%) and independent studies (30.6%). The third most common strategy considered for average students was drill and practice (40.5%). Drill and practice (49.7%) was the number one strategy that teachers would consider for special education students. Individual instruction (25.2%) and workbook exercises (10.7%) were the additional common strategies that teachers would consider using with special education students.

The strategies of independent study, interdisciplinary activities, problem solving activities and projects are strategies teachers would not consider using with special education students. Whilst other listed strategies ranked low as possibilities for use with gifted and average students, there was not a single strategy that they would not consider using at all. When selective high school data are excluded, the additional practice that teachers would not consider using for special education students is higher order thinking practices. Apart from the exclusion of this practice, there is little difference in the results when selective high school data are excluded.

Table 4.11 Percentage of Respondents indicating that they would use various instructional strategies with academically diverse learners as measured by Part IV of the Survey of Practices with Students of Varying Needs (SOP)

	Gifted Students Rank Minus SHS	Gifted Students % Minus SHS	Average Students Rank Minus SHS	Average Students % Minus SHS	Special Education Students Rank Minus SHS	Special Education Students % Minus SHS
Ability grouping	5 6	31.2 29.5	9 8	13.8 12.5	4 4	8.4 9.1
Activities to enhance creativity	6 7	26.8 27.3	8 10	14.6 11.4	9 9	1.6 1.1
Cooperative learning	9 9	16.0 17.1	5 4	20.6 19.3	7 5	3.8 5.7
Curriculum compacting	3 3	46.3 47.7	14 13	7.7 7.9	6 7	6.9 3.4
Drill and practice	14 14	4.6 5.6	2 2	40.5 39.8	1 1	49.7 47.7
Higher level thinking practices	1 1	65.7 67.1	1 1	42.8 40.9	9 0	1.6 0
Independent study	2 2	61.9 61.3	3 3	30.6 30.6		0
Individual instruction	11 10	11.5 11.3	11 12	10.7 9.0	2 2	25.2 23.8
Inter- disciplinary activities	7 8	22.9 20.5	10 11	11.5 10.3		0
Learning centres	10 10	13.7 11.3	12 14	9.9 5.7	5 6	7.6 4.5
Problem solving activities	4 4	38.2 36.3	4 6	22.9 18.1		0
Projects	8 4	21.3 36.3	7 7	19 13.6		0
Values training	12 13	6.9 5.7	12 8	9.9 12.5	7 8	3.8 2.2
Workbook exercises	13 12	6.1 6.8	6 5	19.8 18.2	3 3	10.7 10.2

4.2.6 Discussion

Teachers' and school counsellors' responses to the SOP indicated a conflict of ideas, understandings and knowledge of gifted learners and remedial learners. This conflict would significantly influence their ability to identify gifted students with a learning disability. Whilst teachers and school counsellors have knowledge and a positive attitude towards gifted learners, they did not indicate confidence in identifying them or adapting lessons and individualising instruction, but would consider using a variety of appropriate education strategies for gifted students. It is noted, though, that they have overwhelmingly indicated that gifted learners receive the least amount of attention in the classroom.

This conflict is also demonstrated with respect to remedial learners, with teachers and school counsellors not having a strong attitude either way to these learners but yet indicating that they feel some confidence at identifying these students. In order for teachers to adequately cater for students with diverse needs in the classroom, teachers would need to spend a similar amount of time with each of the different groups. Contradictions continue with the majority of teachers stating, when asked whether they held any special position of responsibility for gifted or learning disabled students, that they did not.

It is interesting to note that some of the activities teachers considered appropriate for gifted students are not considered for special education students or are considered by only a few teachers. Rogers (2002) suggested that there are strategies appropriate for all students, including gifted students. These may include drill and practice, higher order thinking practices, individual projects, curriculum compacting, individual instruction and problem solving activities. Problem solving activities were ranked 4th for average and gifted students but scored a zero for special education students. When selective high school data are excluded higher order thinking practices are also not considered as a strategy for special education students. There is minimal difference in the strategies and practices that teachers would consider using for the three groups of students when selective high school data are excluded. Drill and practice was ranked number one for special education students, but 14th for gifted students with only 4.6% of teachers considering this

strategy for gifted students. Despite ability grouping being ranked 4th for special education students, only 8.4% considered it, yet 31.2% of teachers ranked it 5th for gifted students. This strategy would be appropriate for all students, and would provide opportunity for like-minded students to work together cooperatively – a strategy ranked 9th (16%) and 5th (20.6%) respectively for gifted and average students and 7th (3.8%) for special education students. By nominating drill and practice and individual instruction as the main strategies to be used with special education students, teachers are not providing opportunities for students with both gifts and disabilities to demonstrate their giftedness in the classroom setting.

For a gifted student with a learning disability who has been placed in a remedial program, the lack of opportunities to engage in activities appropriate to gifted students would lead to frustration and possibly behavioural problems. As one of the instructional practices rated highly with remedial students is drill and practice this frustration would be increased. Repeated practice is not going to improve the student's learning disability but rather compensation strategies need to be developed to help the student cope with the effect of their learning disability. The emphasis by teachers on strategies that they would consider for gifted students, if applied without appropriate scaffolding to special education students, will discriminate against students who are gifted with a learning disability. Behavioural problems and acting out in the classroom are often characteristics of students who are under-challenged or struggling to keep up with the rest of the class. These students may also choose to withdraw and underachieve. Parents often reported that their gifted children with a learning disability did not want to go to school as they were struggling with their school work and they may have been bullied or may have bullied others.

Curriculum compacting, which only 6.9% of respondents noted they would use with special education students, is a tool which is useful for both gifted and special education students. A greater percentage of respondents nominating this strategy would suggest that teachers could justifiably indicate that they are aware of where students are at and design appropriate lessons, not only for gifted students but also remedial students. Teachers also rated themselves as having some confidence at accommodating various levels of ability yet only 25.2% of teachers noted that they

would use individual instruction for special education students and less than half that number would use this strategy for gifted students. Based on responses to the use of problem solving activities, and using higher order thinking practices when selective high school data are excluded, teachers are assuming that special education students have no problem solving or higher order thinking abilities as not one teacher indicated that they would consider using these activities with special education students.

Conflicts continued to be demonstrated even though teachers and school counsellors had a positive attitude towards gifted learners. They also indicated some confidence at accommodating various levels of ability and assessing where students were at. They demonstrated substantial confusion about their classroom practices and abilities, in that if they accommodated the various levels within their classroom, assessed where students were at and designed appropriate lessons, they would have been identifying, and adapting lessons for all learners, including gifted and remedial students. The reality was that they appear to be confused in their understanding of the appropriate teaching strategies and activities that are suitable for students with diverse needs.

In order to provide an educational program that is appropriate for these students, teachers need to have sound knowledge and understanding of the special educational needs of this population of students. Through an understanding of these students, teachers will have an awareness of whether the strategies that they are using in the classroom are appropriate. If the strategies are not appropriate, teachers will need to learn what is required in order to be able to implement the correct strategies and activities for diverse learners. The contradictions, conflicts and confusion that have been demonstrated throughout the survey reinforced that teachers do not have the ability to effectively meet the needs of diverse learners.

4.3 TEACHER INTERVIEWS

4.3.1 Introduction

This section will present the findings of the teacher interviews. Eleven teachers were interviewed, but only eight were analysed in depth as this number captured the views expressed by the interviewees and provided both a gender balance and a balance of secondary and primary teachers across all education sectors. The interviews were designed to build on the knowledge gained from analysis of the surveys.

4.3.2 Policy

When asked for some specific detail of what was contained in their school's gifted education policy all teachers demonstrated a lack of awareness of the content of their school's policy or whether one even existed. Responses included:

teachers don't actually read them...,
what is in the document really happens in practice...,
I'm not really involved in that...,
we call it able and interested...,
I think it's been in place for a long time...,
we're just asked to submit names of children...,
yes I think the school has one...,
we are currently revising it...,
that I can't- someone else will be able to tell you about it. (Teacher interviews, various dates)

Despite this lack of knowledge of the content of their school's gifted education policy, most of the teachers were generally able to describe the characteristics they would look for in a student they would consider for a gifted program. The teachers from selective high schools and opportunity classes knew their students were gifted because they had participated in the NSW DET selection process, but they were also aware that a range of levels of giftedness existed within their classes.

Some of the characteristics teachers said they would consider when identifying gifted students were:

insightful....,

creative thinking....,

relatively broad cultural knowledge....,

overly perfectionist....,

ability to link ideas....,

lateral thinking....,

just in every curriculum area in every possible way she's well ahead.

(Teacher interviews, various dates)

Other responses, though, demonstrated a lack or inappropriate knowledge of gifted students, with three teachers providing the following responses:

they have beautiful work, you know done neat and everything....,

I'd even consider one that wasn't committed....,

their marks, whether they were interested....,

we even try and get some of the crazy ones and stick them in an advanced class but it doesn't work. (Teacher interviews, various dates)

One respondent admitted that "*I don't know enough about it. I've done a mini certificate; it didn't go into a lot of detail about how to actually identify*" but this respondent was able to provide several characteristics that she would consider when identifying a gifted student (Teacher interview 15/11/07).

The results from analysis of the surveys indicated that teachers had knowledge of, and a positive attitude towards, gifted education. This was supported in some respects by the responses from a majority of the teachers that were interviewed. This is somewhat encouraging in that with this knowledge, it is hoped that appropriate students will be identified for gifted programs that may be undertaken in schools.

It was interesting to note, though, that interviewees did not nominate any negative characteristics of gifted students. A lack of knowledge about the fact that gifted students also display negative characteristics would mean that it is highly unlikely

that a gifted student with learning disabilities would be nominated for a gifted program. Teachers were also neutral when rating their confidence at adapting lessons, individualising instruction and identifying gifted and remedial learners. They indicated some confidence at identifying remedial learners. A source of information for teachers which would aid them in meeting the needs of diverse learners would be contained in a school's gifted education policy. An absence of knowledge about a school's gifted education policy may mean that official recognition is not given by the school to the possibility that students may not only be gifted but may also have a learning disability, and hence lead to under representation of these students in a school's gifted program.

4.3.3 Learning Disabilities

Analysis of the surveys indicated that teachers had some confidence in identifying students with learning disabilities but were neutral with respect to adapting lessons and individualising instruction for them. The ambivalent attitude demonstrated as a result of quantitative analysis of the surveys was supported through the teachers' responses during the interviews. The initial, and one of the most common responses from most of the teachers interviewed, was that a student with a learning disability is one for whom English is their second language and who would therefore need language support. *"I can't think of an individual whose writing didn't match their apparent ability verbally to a fairly high degree unless it was an individual who was a second or third phase learner"* (Teacher interview 23/10/07). Additionally, the next most common response, recognised disabilities such as:

*"Asperger's, mental disorders or a recognised disability...,
I had a diabetic student and I knew what sort of support he needed...,
something like a hearing or visual problem"* (Teacher interviews, various dates).

Other responses from three of the teachers demonstrated a broader knowledge of learning disabilities and were:

*kids not coping with what's going on in the mainstream without the
assistance of somebody there...,
organisational difficulties...,*

*performing below class average...,
difficulty reading...,
trouble processing information and listening to instructions...,
their writing is really, really poor, literacy.* (Teacher interviews, various dates)

The interviewees did not respond as confidently about the characteristics of learning disabilities as they did to the characteristics for identifying giftedness. This was demonstrated not only by what they said, but also through the manner in which they responded with long pauses and hesitation in their voice.

4.3.4 Classroom and school practices for gifted students and students with learning disabilities

The teacher interviewees did not support the data from the surveys. Analysis indicated that they had not demonstrated confidence in identifying and meeting the needs of gifted students in the classroom, yet the interviewees demonstrated that they did have the knowledge to identify and provide appropriate strategies for gifted students. In contrast the ambivalent attitude towards special needs students was supported by analysis of the teacher interviews. Despite analysis of the surveys indicating that they felt some confidence at identifying students with learning disabilities, none of the teachers interviewed felt it was their responsibility, as they considered that if a child had recognised learning disabilities then they would be severe enough to require additional help in the form of a specialist teacher or assistant in the classroom. Perhaps the demonstration of some confidence in identifying these students stems from the fact that they have made the assumption that these students will come to their classrooms already identified as special needs. Despite this some of the teachers did try and help the students. *“Try and assist them to improve their organisation, a mother comes in once a week, sometimes I can sit with them and work out what is going on, I can give them a different unit – that’s if they want to* (Teacher interviews, various dates).

On the other hand, the interviewees demonstrated that they had the knowledge and were meeting the needs of gifted students within their school, both in the classroom

and through the use of specialist and withdrawal programs. This was contrary to the data obtained from analysis of the surveys where teachers indicated neutrality with respect to adapting lessons for gifted learners. Withdrawal programs took the form of: *“the mathematics challenge – she withdrew kids who had a particular interest or the maths teacher nominated them and now there’s a science group going, participating in Tournament of the Minds (TOM), one hour withdrawal per week in stage groups”* (Teacher interviews, various dates). Analysis of the demographics in the surveys indicated that withdrawal programs were the most common method of providing for gifted students in non-selective schools.

Of the teachers who were interviewed and who considered that they were meeting the educational needs of gifted students in their own classroom, six noted that they:

give extension work...,
the activities are open ended so the child can take it as far as they want...,
grouping children...,
do the same units for each class but we adapt them and have extension activities...,
I give him more – he’s read about 5 to their 3...,
we’ve done some work on the Maker and Williams models...,
most of our programming is gifted and talented stuff. (Teacher interviews, various dates)

The general expectation of seven of the teachers interviewed was that gifted students were autonomous learners and would extend themselves in their own work. This was established through comments such as:

they themselves set their own questions...,
allow them to use their imagination to carry forth research they had done...,
the child can take it as far as they’re able without prompting from me...,
I just give him an individual thing so he’s doing the same units but he just has to do more...,
analysing, looking through it, techniques and then creating their own. (Teacher interviews, various dates)

Only one teacher seemed to understand that gifted students did not automatically acquire the skills necessary to undertake and complete school work on their own, and this teacher felt very much underqualified and wanted to learn more.

If you are gifted and talented you might find things come easily but there's other things you've got to learn – you've got to learn to set out a page, you've got to learn to decode words, you have to learn how to comprehend your reading and you've got to make an effort with things that you don't necessarily want to do or aren't of particular interest to you. (Teacher interview 15/11/07)

Both verbal and non-verbal data presented by the teachers demonstrated that they knew the language to use when describing individual or school gifted programs and that they believed they were meeting these students' educational needs. However, when asked for more specific information about their programs, the teachers could not articulate in detail what was being undertaken. Instead they gave their personal perspective on the programs that were being undertaken in their school.

I would love to go and observe them in the withdrawal program, every single thing here is the same and you just follow along, I don't think I am getting the creative thing that you like to do in your own program however it's less time consuming, they have identified that he's gifted and talented just because he's got a high IQ, mismatch – running around trying to do things gifted and talented but not setting the foundation where they know who is gifted, why and in what way, they throw a Bloom's activity in, lots of open ended things but it is not specific to the gifted children. (Teacher interviews, various dates)

The willingness to meet the educational needs of gifted students was obvious from not only what the teachers said, but also their demeanour and tone of voice during the interviews. Students with learning disabilities, though, were generally considered to be the responsibility of a specialist. As a result of this separation of resources and programs, the possibility of identifying a student who is in the gifted program but also has a learning disability is highly improbable and the possible

situation of a student in a program for learning disabilities being identified as gifted is even more improbable. *“We decided that gifted and talented was a misnomer that assumed they were gifted and talented, whereas able and interested seemed to fit the bill and gave more choice”* (Teacher interview, 01/11/07).

4.3.5 Barriers to identification and appropriate programming

The teachers interviewed could identify students who were gifted, and could identify a student with learning disabilities if the disabilities were recognisable or easily identifiable ones such as behavioural disorders, hearing or visual impairment. More subtle disabilities such as fine motor control affecting handwriting, processing difficulties affecting both auditory and visual skills, gross motor deficiencies affecting a student's ability to sit still in a classroom and issues such as crossing the midline reflecting brain development are less likely to be identified. Crossing the midline means that the right hand is used on the left side of the body. A lack of transference across the body hinders development of the dominant hand and hence development of optimal ability for all fine motor tasks. The possibility of identifying a student who was both gifted and had a learning disability and providing an appropriate program at school was not very well understood by many of the teachers interviewed. Some of the characteristics suggested by all the teachers were:

if kids have a disability or difficulty in their learning it would be an organisational difficulty as other difficulties are more difficult to detect...,
disorganised...,
very, very immature...,
single minded about what he is interested in...,
they can hardly read...,
discrepancy between what he was doing and what even some of the weaker children in the class were doing...,
personality comes into it so much and acting out. (Teacher interviews, various dates)

The teachers interviewed expressed a keen desire to learn more about gifted students with a learning disability and recognised that there were many reasons why

these students were not being identified and therefore not receiving an appropriate educational program at school. Typical responses were:

Limited funding, place gets so busy, testing shows there is some sort of processing problem but they don't really give you a way of actually coping with it in the classroom, if we weren't spread so thinly across so many curriculum areas, we have no input, need more time, more resources, I haven't got time to go searching for the diamond under the rough, when you've got five or six with behaviour problems and learning and there's no help in that classroom – we need it that's for sure. (Teacher interviews, various dates)

Further training was an area that the teachers expressed an interest in pursuing. *“You don't really know about this because it's not explained, it's only when you ask questions, I feel I don't know enough about how to deal with the child that's underachieving when they have such a high IQ, I don't know enough about it, all schools need to know where to access expert help”* (Teacher interviews, various dates). Some teachers, though, were specific about who they would consider appropriate to deliver the training. *“I feel I would need a lot more input from people who are real experts not just from other teachers on the staff who might have done an extra course or something, there are outside bodies with expertise that you could go to”* (Teacher interviews, various dates).

It was interesting to note that only two teachers mentioned the parents, one to note that if a child had a disability or was not achieving as expected that he would contact the parents and try and work with them to help the student. The other commented on a parent who was dissatisfied with what was happening in the classroom: *“mother quite strongly pushing for it and took a bit of an arrogant attitude which made us bristle a bit”* (Teacher interview, 15/11/07). After some discussion with the parent the issue was resolved and the general feeling was that the parent was not aware she had upset staff in the school.

4.3.6 Discussion

Identification of students who are gifted with a learning disability as demonstrated by this research is possibly not occurring in schools, not because the teachers are unwilling or unsupportive of the concept, but rather because they do not have the ability, knowledge and support to do so. They were interested to learn more in order to provide appropriate educational experiences for this group of students and felt that with the support and cooperation of the staff involved that this could be achieved.

You need of course the backing of the head teacher and the principal and the right to go wherever you like. You need carte blanche. You need someone to say that's your class and you can do what you need to do with them. (Teacher interview, 01/11/07)

Some of the data obtained from the surveys in addition to data from the interviews confirmed that teachers can identify gifted students and that they are aware of the classroom strategies that are relevant for these students. This was demonstrated by the positive attitudes teachers had towards gifted students and their ability to articulate the characteristics of gifted students. The teachers interviewed were also able to discuss various appropriate classroom strategies such as open-ended tasks and curriculum differentiation.

Data demonstrated substantial confusion, however, with teachers noting that they have knowledge of gifted education, yet don't rate themselves as confident at identifying gifted students and providing appropriate lessons and instruction. The survey data as well as interview data also indicated that teachers are aware of the appropriate strategies and activities for these students yet when asked to provide specific examples of tasks or programming for gifted students they were unable to do so.

A contradiction was also established with respect to students with learning disabilities. The survey data demonstrated that teachers had some confidence in identifying these students but interviewing showed that this was probably because

the teachers considered that the students were being identified prior to attending class. Additionally the interviewees did not feel it was their responsibility to meet these students' needs in the classroom. This was demonstrated through their inability to provide examples of specific disabilities that they would recognise in their classrooms and strategies for these students that they would implement in their classes.

These issues highlighted that identifying gifted students with a learning disability in the school system is unlikely to occur, particularly when there is a definite and visible divide between students with learning disabilities and students who are gifted. This was highlighted by not only the different attitudes of the teachers as demonstrated through analysis of the surveys but also the contradictions provided through survey data analysis and analysis of teacher interviews. Substantial, appropriate and comprehensive training is needed in order to overcome these deficits.

CHAPTER 5

CASE STUDY 1

THOMAS

5.1 INTRODUCTION

This chapter will discuss the process of identification of Thomas as gifted with learning disabilities, the interventions undertaken and the effects on the family and Thomas of being identified as gifted with a learning disability.

5.2 BACKGROUND INFORMATION

Thomas lives at home with his mother and older sister. His mother is a book keeper and is self employed. He attends a school in the Sydney Metropolitan area in Australia. At the time of the research Thomas was in Year two at primary school.

Thomas was identified as being gifted with learning disabilities after starting school. Initially his mother was alerted to the possibility that her children may be bright when the older sibling disengaged from school after having previously been a child who was eager to learn and continually asking questions. The possibility of a learning disability was not considered at this stage.

His mother attended a parent information evening about gifted children at the school, but even after the information still felt that her children were merely bright, not gifted. IQ testing of the older sibling was undertaken as a result of the mother requesting a higher level of spelling for her daughter and being told by the teacher *“that I was pushing [my daughter] far too hard. That she was just coping with mainstream and I needed to back off her. I was making her do too much and she just wasn’t coping”* (Parent interview 25/01/08). In order to discover whether this was true, the child was IQ tested using the Stanford-Binet Intelligence Scale: Fifth Edition (SB5) and obtained an IQ on the 99th percentile.

Thomas also disengaged from school within six months of starting kindergarten and exhibited behavioural issues. His mother, though, felt there was more to his behaviour, and the following year in Year one when the behavioural issues escalated at a faster pace and “*he was on permanent detention*” (Parent interview 25/01/08), she decided to initiate investigation procedures. “*I took him to a behavioural optometrist because when he read at home it was almost like he was taking the last letters and blending them with the first letters and guessing the centre*” (Parent interview 25/01/08).

5.3 IDENTIFICATION

Thomas was initially annoyed at having to talk to the researcher, understandably so, as it was school holidays and he was watching one of his favourite DVDs. Despite being told by his mother that he could go back to it, he was not happy because his sister was going to watch it and he would lose his place. This problem was solved by checking the counter and noting where he was up to. He was slightly happier with this arrangement although not completely convinced that it was fine. I asked him if he was annoyed about this situation and he agreed that it was “*a bit annoying*” (Student interview 25/01/08). I then asked if he wanted me to keep the interview short so that he could go back to watching the movie. His response was “*you choose*” (Student interview 25/01/08). When told that keeping it short would depend on him telling me about himself he became more settled and immediately said, “*Yep. I can tell you something. I sleep in a bunk bed*” (Student interview 25/01/08).

Despite his young age, Thomas displayed a real insight into his teacher’s methods and sadly was already demonstrating intolerance to the school system.

Yeah, but I don't like it either because they don't teach me anything. I've already got taught that, and they can see it, but they don't care. They even saw it in kindergarten and they didn't care. They wouldn't even put me into a gifted and talented class after kindy. (Student interview 25/01/08)

Thomas's mother, as a result of her experiences with his older sibling, described her perceptions as follows:

On a learning curve and you know how everything overlaps, and you read lots of things and you go lots of places and you look at lots of checklists and I was fairly convinced that he was dyslexic. That's what I was looking for because it was just the way he was moving words around. So we started on the merry go round. (Parent interview 25/01/08)

5.3.1 IQ Assessment

Thomas was assessed at the age of 7 years using the Stanford-Binet Intelligence Scale: Fifth Edition (SB5) (see Table 5.1 for results). His Verbal IQ (VIQ) placed him on the 99th percentile while his Nonverbal IQ (NVIQ) placed him at the 98th percentile, with a Gifted Composite Score (GIQ) placing him at the 99th percentile. These results indicated that Thomas was a gifted student and, as such, should have been provided with an appropriate educational program by the school. The IQ assessment did not highlight any particular learning disability.

The psychologist noted that strengths for Thomas were in the areas of knowledge, quantitative reasoning and visual-spatial processing with working memory being an area of weakness. It is noted that demonstration of this weakness on the SB5 is not unusual for gifted children, as the tasks are rather meaningless, and do not engage gifted students. As this score affects the Full Scale IQ (FSIQ), the GIQ is considered a better estimate of the ability of a gifted student (Report dated 12/09/07).

Table 5.1 Results of IQ Assessment

Stanford-Binet Intelligence Scale: Fifth Edition	Scores/Percentile Rankings	Sub tests	Results
DOA – 12/09/07 CA 7.0 yrs			
DOMAINS			
Verbal IQ	134 – 99%ile		
Nonverbal IQ	130 – 98%ile		
FACTORS		Fluid Reasoning	129 – 97%ile
		Knowledge	134 – 99%ile
		Quantitative Reasoning	130 – 98%ile
		Visual-Spatial Processing	132 – 98%ile
		Working memory	117 – 87%ile
Gifted Composite Score	136 -99%ile		

In the recommendations, the psychologist noted that Thomas had a high ability to manipulate visual concepts and therefore that he thought in an abstract manner. This would have been a disadvantage for him at school particularly in the early years of schooling as information was presented in a concrete way in the classroom. This method of learning would have led to severe frustration for Thomas and he has obviously demonstrated this frustration through his inappropriate behaviour in the classroom. Other recommendations included: grouping with like-minded students, teachers with qualifications in gifted education, adapted teaching strategies, and counselling at different times in order to help him deal with his differences from other students (Report dated 12/09/07).

5.3.2 Vision Assessment

Thomas was assessed by a developmental optometrist (see Table 5.2 for results) who noted that *“his visual system is unable to take in information and process it efficiently in a couple of areas, resulting in some extra effort to obtain satisfactory academic results”* (Report dated 24/07/07). It was also noted that Thomas had some difficulty with convergence and divergence, which indicated that he would have found it difficult to copy accurately from the board. As a result he would have required extra effort in order to complete copying tasks and would have tired easily.

The developmental optometrist recommended a program of vision therapy for Thomas. His mother did not implement this program as [the optometrist] *“couldn’t tell me whether it would help, couldn’t tell me anything and said \$550.00 up front thank you”* (Parent interview 25/01/08).

Table 5.2 Results of Visual Assessment

TEST	Percentile Rank
Visual discrimination	61
Visual memory	9
Visual spatial relationships	96
Visual form constancy	30
Visual sequential memory	92
Visual figure ground	84
Visual closure	4
Overall rank	55

5.3.3 Physical Development Assessments

In order to assess Thomas’s functional skills within the developmental and learning context, the general areas of fine and gross motor skills, handwriting abilities, visual perceptual skills and body awareness, an assessment was conducted by an Occupational Therapist using the following tests:

- The Beery-Buktenica Developmental Test of Visual Motor Integration (5th Edition, 1997) (see Table 5.3 for results);
- Bruininks-Oseretsky Test of Motor Proficiency (BOT2) Edition 2 (Bruininks-Oseretsky, 2005) (see Table 5.4 for results);
- Goodenough Draw-a-Man Test (Goodenough, 1998);
- Guidelines for Assessment of Handwriting Difficulties (Bonney & Perks, 1993); and,
- Clinical Observations of Motor and Postural Skills (Wilson, Pollock, Kaplan & Law, 2000) (see Table 5.5 for results).

Table 5.3 Results of the Beery-Buktenica Developmental Test of Visual Motor Integration

SUBTEST CA 7years 1mth	STANDAR D SCORE	PERCENTIL E RANK	AGE EQUIVALEN T	DESCRIPTIO N
Visual Motor Integration	91	27	6.3 years	Average range
Visual Perception	99	47	7.0 years	Average range
Motor Coordination	86	18	5.6 years	Average range

Note: Average encompasses standard score range between 83 and 117

In both the Beery-Buktenica Developmental Test of Visual Motor Integration and the Bruininks-Oseretsky Test of Motor Proficiency (see Tables 5.3 and 5.4 for results), Thomas scored in the average range; however, he demonstrated a substantial discrepancy in his results. He was tested at the age of 7 years and 1 month but his age equivalent results ranged from 5.6 years to 7.5 years. It was noted in the report that these discrepancies are an indication that he had difficulty integrating his visual and motor systems (Report dated 31/10/07).

This inability to efficiently integrate his visual and motor systems would have been highlighted while undertaking fine motor tasks such as controlling his pencil when drawing, writing, or copying. Thomas also demonstrated difficulty with planning and evaluating the best way to complete required tasks during the assessment. He would lean to one side when asked to draw from left to right across the midline. The assessor noted that, “*Thomas needs to work hard to be able to achieve average level results, when he should be achieving higher than average*” (Report dated 31/10/07).

Table 5.4 Results of Bruininks-Oseretsky Test of Motor Proficiency

SUBTEST CA 7years 1mth	SCALE SCORE	PERCENTILE RANGES	AGE EQUIVALENT	DESCRIPTION
Fine motor precision	14	18-83	6.0 – 6.2 years	Average range
Fine motor integration	14	18-83	6.3 – 6.5 years	Average range
Manual dexterity	15	18-83	6.9 – 6.11 years	Average range
Bilateral coordination	16	18-83	7.3 – 7.5 years	Average range
Upper limb coordination	15	18-83	7.3 – 7.5 years	Average range

Note: Average encompasses the range between scaled score of 11-19, a standard score range of between 41-59 and percentile ranking of between 18 - 83, with a standard deviation of 10.

In the Goodenough Draw-a-Man Test – which considers that a child’s drawings have an intellectual rather than an aesthetic origin – he scored 20. This was equivalent to an 8 year old. The report stated: “*It is interesting to note that some parts of his drawing were more detailed than expected for his age, and others were less detailed*” (Report dated 31/10/07).

In observations of his posture and movement, pencil grip, letter formation and letter size when handwriting, Thomas demonstrated some appropriate skills but also showed that he had difficulties in some areas. He was able to hold the pencil consistently in his dominant hand and stabilise his paper with the appropriate tilt when writing. He was able to change direction when writing his letters and was able to copy all the letters of the alphabet and demonstrated consistent sizing and spacing of letters when writing a sentence (Report dated 31/10/07).

Thomas sat hunched and tense with his feet inappropriately placed to support the correct position for writing. He held his pencil too close to the tip and controlled his pencil from his knuckles rather than using the middle and end joints of his fingers. Although he could copy all the letters of the alphabet he formed the letters 'e', 'f', and 'j' from the bottom up, rather than vice versa and formed 'p' from the circle first, instead of from the top to the bottom then completed the circle (Report dated 31/10/07).

Table 5.5 Results of Clinical Observation of Motor and Postural Skills

Movement	Raw score out of	Weighted score
CA 7years 1mth	possible 12	
Slow movements	10	2.20
Rapid forearm rotations	10	4.60
Finger-nose touching	7	0.21
Prone extension	6	-0.24
Asymmetrical tonic neck reflex	12	-84
Supine flexion	8	2.32
Total weighted score	-0.29	Below average score

Note: Weighted score adjustment is 8.52. Total of 0 in weighted score is within normal range.

When motor and postural skills were assessed (see Table 5.5 for results), Thomas's total weighted score ranked him below the normal range for his age. He was able to copy slow movements, but not perform them smoothly. In addition he could hold but not maintain a weight bearing posture on his stomach and back. This inability to

maintain these postures indicated that he had a weakness in his core muscles. Thomas was required to touch his finger to his nose with which he had some difficulty, indicating that he has a problem with motor planning. This was also highlighted in the visual and motor integration assessments. As a result of these problems he had difficulties processing visual and tactile cues and converting them into smooth movements (Report dated 31/10/07).

In the conclusion of the occupational therapy report it was noted that Thomas was performing at a lower level than that expected for a child with his intellectual capabilities. The main issues for Thomas were sensory processing, particularly proprioceptive and additionally tactile and visual processing. The recommendations made on the report were that the school be informed of the results and appropriate implementations put in place and that he undertake some occupational therapy (Report dated 31/10/07). His mother followed these recommendations but did not find that the occupational therapy helped at all. The school made no effort to accommodate Thomas's needs in the areas of visual and motor processing.

At the age of 8 years and 6 months a follow-up assessment by an occupational therapist was undertaken as the school and his mother had agreed that a technological approach to his schoolwork was required. The assessments that were undertaken and the results can be seen in Tables 5.6 to 5.9.

Table 5.6 Clinical Observations of Handwriting – (non-standardised)

Skill area	Significant Difficulties	Some Difficulties	No difficulties
Posture		x	
Pencil grip		x	
Letter/number formations		x	
Letter size		x	
Letter placement		x	
Orientation to the line		x	
Spacing between words		x	
Use of capital letters and punctuation		x	

Table 5.7 Handwriting Speed Test

Scaled Score	Percentile Rank	Descriptive Range
39.6	16 th	Mildly impaired

Handwriting = 119 letters, Typing = 79 letters

Table 5.8 Clinical Observations of Motor and Perceptual Skills

Movement	Raw scores out of possible 20	Weighted score
Slow movements	8	-1.44
Rapid forearm rotations	12	7.92
Finger – nose touching	11	2.64
Prone extension	6	0.90
Asymmetrical tonic neck reflex	10	2.00
Supine flexion	6	0.24

Note: weighted scores adjustment is 9.80. Total of 0 in weighted score is within the normal range.

Table 5.9 Test of Visual Perceptual Skills – Non Motor

Test Results	Standard Score	Percentile Rank	Visual Perceptual Age
Visual discrimination	104	61 st	8.9 years
Visual memory	99	47 th	8.2 years
Visual spatial relationships	121	92 nd	12.11 years
Visual form consistency	61	1 st	4.4 years
Visual sequential memory	101	53 rd	8.5 years
Visual figure ground	99	47 th	8.4 years
Visual closure	66	1 st	4.10 years

Note: Overall Visual Perceptual Quotient: 90. Overall Percentile Ranking: 25th

As a result of the above assessments several recommendations were made:

- *That his mother discuss the implications of the report with the school;*

- *Thomas's desk should directly face the board;*
- *Visual distractions and displays around the board should be minimal when he is required to copy from it;*
- *If possible a handout printed version of information should be provided for him to copy at his desk;*
- *All information should be large, clearly written and on a good contrasting surface (black on white);*
- *That Thomas have a scribe for the NAPLAN tests [National Literacy and Numeracy Testing Program in Australia];*
- *That Thomas have regular access to a computer to gain experience in typing. (Report dated 11/03/09)*

The results of these tests showed improvements in some areas but Thomas had regressed in others.

5.4 DISCUSSION

Thomas is currently in Year two and already totally disengaged from school, as well as exhibiting inappropriate behaviour, which resulted in him being placed on an in-school suspension. This meant that he had to sit outside the principal's office.

Thomas had been identified as gifted through IQ testing and, as a result, should have been provided with an appropriate educational program. Testing had identified that he had disabilities which affected his learning. The occupational therapist acknowledged that due to Thomas's intellectual capacity he should have been performing at an above average level. This was in direct contrast to the school's response. Whilst Thomas was in kindergarten and Year one, the school did not respond to either the results or the recommendations of the assessments. Instead they focused on the behaviour, "*you are acting like a baby so you can go down with the babies in kindergarten. It was time out for him. While he was down there he helped the kindies*" (Parent interview 25/01/08).

Outside of school Thomas participated in science programs, visited museums and art galleries and was involved in activities organised by an association for gifted

children and their families. At these activities Thomas once again became the inquisitive child who asked non-stop questions and who responded enthusiastically when he had the answers. Within school he had little patience for the school's lack of recognition of his ability and the lack of fairness on the part of the adults.

At the end of a school day his teacher said to him, "Now Thomas I want you to go home and have a good think about your actions today" and he said "Well only if you do because you're in the wrong too." It doesn't help, it's just another detention. (Parent interview 25/01/08)

A lack of appropriate schooling has started Thomas on the path of underachievement and possible continued behavioural issues which may escalate and become more serious.

5.5 PARENT RESPONSE

Thomas's mother became aware of the issues and implications of giftedness as a result of her eldest child, and the child's change of behaviour and attitude to learning after starting school. Initially she felt that her children were bright but not gifted. She was aware that they had lost the "spark" for learning and that Thomas was engaging in inappropriate behaviour which resulted in him being on permanent detention by the end of kindergarten.

The kids in the school told me, twice Thomas and another student got caught down at the bottom gates (an exit from the school located at the lower end of the school grounds). Here are two six year olds at the bottom gate. What was the plan? The plan was to go around to the other child's grandmother's place, get the spare key for the car and take the car for a drive. Now the school said, "Just fantasy" and I'm thinking, "No I have been questioned for the last two months about how to drive a car, and now I know why. This is not fantasy." And the school never told me. (Parent interview 25/01/08)

Because of Thomas's behaviour, his disengaged attitude towards learning at school and his mother's concern that he may be dyslexic, she embarked on a series of assessments in order to help him. She did not want to push him beyond his capabilities, yet if he had problems she wanted to ensure that he got the help he needed. The reports from the professionals consulted were provided to the school as well as recommendations, and at one stage, an Individual Education Program (IEP) that had been specifically designed for him by a specialist from outside the school. The school's response was to file the information and state that they would only respond appropriately when Thomas exhibited correct behaviour and output.

Thomas's mother had worked hard to educate herself about gifted education. She had wanted to support her children and work with the school but instead had realised *"that being a pushy parent is something that you need to be. You need to advocate, you have to. And his self esteem had hit rock bottom and they weren't helping, all they were doing was punishing, not understanding, not assisting, interventions needed to happen"* (Parent interview 25/01/08).

5.6 THOMAS'S UNDERSTANDING

Thomas is a child who despite his young age had recognised that he was intelligent and found school work easy. *"Because they teach me stuff that I already know and I know it straight away and I get annoyed when they keep saying it again and again"* (Student interview 25/01/08). He did not mind having to work hard but chose to complete his work slowly when it was easy as he did not want to have to do more of the same work. Thomas did not enjoy Kindergarten or Year one, but was hoping that Year two would be better as he would be in a Year 1/2/3, composite class. He is expecting that the work will be at a faster pace.

Thomas had a realistic attitude towards his abilities, but as yet does not conclude that he has a learning disability. *"Not really everyone's good at everything"* (Student interview 25/01/08). Thomas was very articulate and firm when talking about his efforts in the classroom and the teacher's response to those efforts, and in particular the double standards displayed within the classroom.

Yeah but it'll be hard to do that (demonstrate his knowledge) because it will be likely that they'll only believe you if you act good, and they can see you do it. I do give them the chance. Like, I wait a lot of time. I wait for one term and that's like ten, eleven weeks and then I start getting angry. Wait for them to actually notice that I'm all right to do different work. So if I know it straight away then they should actually keep going on with it [letting him move onto the next level of work]. (Student interview 25/01/08)

Thomas at this point in time gave the impression that he had no intention of conforming to the school system any more than he already had. He felt he had done his part and that if the school chose not to recognise his ability and provide an appropriate curriculum then he was going to react in a way that he felt was appropriate despite the consequences. He would simply shut down and not work or comply with instructions given in the classroom.

5.7 FAMILY EFFECTS

Having a child who is gifted with learning disabilities had meant that there had been a cost to the family financially, in time, in research, in planning, as well as an emotional cost. As a single parent Thomas's mother has not had the support of his father. She had sourced information about giftedness and spent considerable time attending extra-curricular activities that provided her children with intellectual stimulation in order to compensate for the lack of stimulation at school.

Even though Thomas's mother had consulted with professionals and had been prepared to share this information with the school, she has had to endure disbelief from teachers and the principal. The primary school's reaction highlighted for her that there are many in the educational field that have little or no understanding of gifted education.

And I said it's going to be such a relief to be able to stop running around like a maniac on weekends trying to stimulate them because I thought that the school would educate them, I'm such an idiot and they said "no, no

you'll have to probably do even more of that now.” That was their response. (Parent interview 25/01/08)

The time involved in taking Thomas to the assessments and intervention programs had meant balancing the family's various commitments. Undertaking assessments and consulting with a variety of professionals in the private sector became very expensive very quickly and at times dictated the period of time the intervention was applied. For some assessments, the cost necessitated going onto a waiting list for public health assessments.

This family is just at the beginning of their educational journey as Thomas is only in Year two. He has been placed in a 'gifted class' but it remains to be seen whether this class delivers an educational program which provides appropriate intellectual stimulation for him, and whether, as a result, he can turn around his behavioural issues and begin to achieve to his potential at school.

5.8 CONCLUSION

Thomas's mother provided additional information which was not available initially due to assessments and interventions still to be conducted and the notification of additional results. A ten week period of occupational therapy was undertaken at a substantial financial cost. His mother reflected that “*OT was a complete wash out – a waste of money*” (Email dated 20/01/09). Additionally his mother enrolled Thomas in private swimming lessons and as a result she stated that “*his handwriting did marginally improve*” (Email dated 20/01/09). These activities were completed in Term 2 and Term 3 of the school year. In Term 4 his mother noted:

I was having a mental breakdown and could no longer cope with all the running around and pulled the plug on as much as possible in the hope that things would work themselves out – they haven't but I have recharged ready to take it all on again. (Email dated 20/01/09)

In the new school year Thomas was placed in a dedicated class for gifted students and accelerated in mathematics. His school report at the end of the school year was

a complete reverse from the previous year. His mother showed his report to him and his response was a request to see the previous year's report. His mother informed him that she had torn it up and thrown it out as it had not "*accurately reflected his year at school merely the school's emotional level with him*" (Email dated 20/01/09). Thomas loved this teacher who supported him and was aware that he was trying even if his output was not what could have been expected of a child of his intelligence. Thomas currently has the same teacher and is still in a dedicated composite (Years 3 & 4) class for gifted students.

His mother is still at a loss about what to do about his handwriting despite having used a developmental handwriting program. She had spoken to the school, which is investigating the introduction of a touch typing program and additionally, purchasing several mini computers as well as speech recognition software, as there are other students in the school who would benefit from such resources as well.

Thomas's mother is currently experiencing a positive and supportive relationship with her children's school and is endeavouring to further support and nurture her children in the home environment. With continued support Thomas has the opportunity to achieve his potential.

CHAPTER 6

CASE STUDY 2

ADAM AND MARK

6.1 INTRODUCTION

This chapter will discuss the process of identification as gifted with learning disabilities of siblings, Adam and Mark, who, as well as demonstrating individual learning disabilities, also displayed some disabilities in common. The boys will be discussed separately followed by a discussion based on the areas of commonality.

6.2 BACKGROUND INFORMATION

Adam and Mark are siblings who live at home with both parents. There are no other children in the family. Both parents are university-qualified engineers. Adam is the elder of the two boys and they attend schools in the Sydney Metropolitan area in Australia. At the time of the research both boys are in primary school.

Both boys have been identified as gifted with a learning disability and were identified after they had started school, despite the mother being aware that there was a problem with Mark at pre-school. The identification process for the two boys was undertaken as a result of the parents pursuing various avenues independently, as well as following through with testing procedures suggested by the school and other professionals.

6.3 ADAM

6.3.1 IDENTIFICATION

Adam was pleasant and highly articulate throughout the interview. He impressed the researcher with his level of self understanding, self confidence, maturity and his ability to express himself. To someone who did not have an understanding of

giftedness, the researcher could well imagine that Adam would be intimidating and they might be in awe of his demonstrated precocious intellectual ability.

Adam was not assessed for giftedness or learning difficulties until he was in Year three at school. Investigations were initiated as a result of behaviours he was exhibiting. Adam had tantrums every day, both at home and at school. This behaviour had not been demonstrated before. His parents did not know why, and were finding the behaviour difficult to cope with. *“We were at a loss, it was just a nightmare to live with, it was just so awful and we didn’t know why this was happening”* (Parent interview 18/01/08). Adam himself was aware that things were going *“off the rails”* and he felt powerless to deal with it.

I had a really bad teacher who couldn’t recognise any talent from any student and thought they were all basically equal. So he gave very uninteresting work, I basically learnt only one thing in an entire year which was vertical addition in Year three so that wasn’t very interesting at all and I started getting into bad habits. (Interview 18/01/08)

When asked what sort of bad habits, he responded, *“Bullying and stuff”* (Interview 18/01/08). He was then asked how he dealt with this, to which he replied, *“I didn’t basically”* (Interview 18/01/08). Adam’s parents confirmed this and stated that he was bullying his best friend. Not only was he bullying his best friend but he also had anger management problems.

At the school’s suggestion Adam started seeing the school counsellor but after a few weeks of consultation with the school counsellor there was still no answer as to why Adam was throwing the temper tantrums. Adam’s parents noted that he was happy to visit the school counsellor because it meant he was out of the classroom.

Glad to go to the school counsellor because it got him out of that teacher’s lesson and he had someone sensible to talk to. He was getting detentions every day. (Parent interview 18/01/08)

The school counsellor advised the parents to consult with a psychologist. After six weeks of consultations and with no changes in Adam's behaviour patterns, the psychologist suggested that Adam be IQ tested as she could not provide an explanation for his behaviour.

6.3.1.1 IQ Assessment

A WISC III was conducted at age 9 years by the school counsellor. Results indicated that Adam was in the very superior range for his Verbal IQ (VIQ) and in the high average range for his Performance IQ (PIQ). This suggested that he was a gifted student and as such the school should have provided an appropriate educational program to meet his special needs. The difference between the VIQ and PIQ suggested potential learning disabilities which needed to be addressed as well (see Table 6.1 for results). After the testing the school counsellor approached the mother in the school playground and informed her that "*Adam is very, very, **very** bright*" (Parent interview 18/01/08). The mother then asked whether this could be a possible reason for his temper tantrums and was told "*Of course, he's bored out of his brain with that teacher*" (Parent interview 18/01/08). The parents felt relief that a cause for Adam's behaviour had possibly been identified. "*OK at least we know why he's having these tantrums we just need to work out what to do*" (Parent interview 18/01/08).

A Full Scale IQ (FSIQ) was not calculated because of the discrepancy between the VIQ and PIQ. This was acknowledged by the examiner. "*Adam's unique set of thinking and reasoning abilities make his overall intellectual functioning difficult to summarize by a single score on the Wechsler Intelligence Scale for Children – Third Edition*" (Interpretive Report of the WISC - III Administered 06/05/04). The report noted that his verbal reasoning skills were significantly stronger than his nonverbal reasoning abilities. Strengths and weaknesses were highlighted with short term memory considered a weakness as demonstrated by the low score on the Digit Span subtest. The ability to mentally organise visual information was identified as a strength as demonstrated by his score on the Block Design subtest.

Adam's Processing Speed placed him at the 66th percentile and therefore within the average range, whilst his nonverbal abilities placed him in the high average range. These results, when considered with the results for his verbal abilities indicated that Adam had areas of disability that had affected his learning. When identifying Adam as gifted the possibility that he could also have a learning disability which could impact on his learning, and which should therefore be taken into account when developing an appropriate educational program, was not even considered, as he was not achieving at a **below** average level in any area. The only recommendation made as a result of this testing was that, "*Adam's significantly above average abilities in verbal tasks including arithmetic suggest that extension work would be greatly beneficial at school*" (Interpretive Report of WISC - III Administered 06/05/04). No mention was made of the possibility that he could find some areas of his learning difficult and that, in fact, some areas could be inhibited by learning disabilities.

Table 6.1 Results of IQ Assessment

WISC III					Sub tests	Sub test
DOA 06/05/04						scaled scores
CA 9yrs						
Verbal (VIQ)	IQ	Very superior range	147- 99.9%ile	Information	18	
				Similarities	17	
				Arithmetic	18	
				Vocabulary	18	
				Comprehension	19	
Performance IQ (PIQ)		High average	119 – 90%ile	Digit Span	12	
				Picture completion	11	
				Coding	10	
				Picture arrangement	12	
				Block Design	19	
				Object assembly	12	
				Symbol search	12	
Full Scale IQ (FSIQ)		Not calculated				
Index summary scores				Verbal comprehension	146 – 99%ile	
				Perceptual organisation	122 – 93%ile	
				Freedom from distractibility	129 – 97%ile	
				Processing speed	106 – 66%ile	

6.3.1.2 A Neale Analysis of Reading (3rd Edition) – Form 1 – Assessment

A Neale Analysis of Reading (3rd Edition) – Form 1 was conducted by the school counsellor prior to conducting the WISC – III, and a second Neale Analysis of Reading (3rd Edition) – Form 1 was conducted by the Irlen Dyslexia Centre approximately 18 months later (see Table 6.2 for results). The school did not comment on the results of the Neale Analysis of Reading and although there were some differences between the two sets of test results, Adam appeared to be reading at or above age level. Reading was not a major problem for him.

Table 6.2 Results of Neale Analysis of Reading (3rd Edition) – Form 1

29/4/04 CA 9yrs			
Test			
Accuracy	62%ile – yrs	10.6 – 10.8	Average range
Comprehension	88%ile	>13.1 yrs	Above average range
Rate (58wpm)	52%ile	9.6 yrs	Average range

12/10/05 CA 10.5 yrs		
Accuracy	57%ile	11.2 yrs
Comprehension	61-65%ile	11.6 yrs
Rate	62%ile	11.2 yrs

In addition to the Neale Analysis of Reading (3rd Edition) – Form 1, the Irlen Dyslexia Centre conducted visual and perceptual ability testing. The test results concluded that he had Irlen Syndrome (Scotopic Sensitivity Syndrome), “*a severe perceptual dysfunction affecting how the brain interprets the message it receives from the printed page and environment*” (Irlen Dyslexia Centre report 17/10/05). This syndrome reduced his reading effectiveness as well as the time it took him to translate his ideas into print and to make his handwriting legible and presentation neat. As a result “*Adam may have difficulty concentrating for long periods and fatigue more quickly when reading particularly as the print size becomes smaller and the reading demands increase*” (Irlen Dyslexia Centre report 17/10/05). The report also noted that copying accurately from the board may have been difficult for Adam.

The Irlen Dyslexia Centre made several recommendations to help Adam at school. They were:

- *Spectrally modified Irlen tinted filters;*
- *Frequent short breaks when reading;*
- *Extra time for all reading and writing activities and assessment tasks as required;*

- *A structured phonics program that is multisensory to assist the development of long term reading and spelling strategies;*
- *Sit close to the board when copying from it or copy from a competent friend or have a copy of the notes provided;*
- *Glare reducing filter or alter the colour of the background when using the computer;*
- *Turn off some of the lights, or he does not sit directly under them or facing a window;*
- *Modified homework expectation;*
- *Give homework instructions in print;*
- *Learning to touch type and being allowed to type assignments and assessable material to improve legibility and presentation. (Irlen Dyslexia Centre report 17/10/05)*

6.3.1.3 Auditory Assessment

Adam's auditory skills were assessed using the Threshold Order Processing (TOP) Test and the SCAN test which comprises three subtests – Filtered Word Test, Auditory Figure Ground Test and Competing Word Test (see Table 6.3 for results). For the TOP Test, the normal speed of processing for visual and auditory information is 40 milliseconds (ms). Adam's results were well outside this speed indicating that he had auditory processing disabilities. The TOP results *“are indicative of problems with auditory comprehension and memory which affects all areas of learning but predominantly reading, writing, spelling and comprehension and may affect behaviour and socialisation”* (Report date 16/08/05).

Adam's score on the Filtered Words Test meant that he would have demonstrated poor auditory skills if sounds were not presented face to face as this test distorts clear speech and sends sounds through to the ear on an angle. His score on the Auditory Figure Ground Test which is a test containing background noise, indicated *“functional auditory skills when noise is present”* (Report date 16/8/05). This was also true for the Competing Words Test in which two sounds are presented to both ears simultaneously, where he was placed on the 63rd percentile.

Table 6.3 Results of Auditory Assessment

Threshold Order Processing Test (TOP)	
Visual processing	71ms
Auditory processing	148ms
Visual/auditory	68ms
SCAN Test	
Filtered word test	score 8 – 25%ile
Auditory figure ground test	score 11 – 63%ile
Competing words test	score 11 – 63%ile

Note: Normal speed of processing for visual & auditory information for a child over 6 years of age is between 40 – 60 milliseconds. Average scaled scores for the SCAN tests is 10 or 50th percentile

In order for Adam to compensate for his auditory difficulties it was recommended that he sit towards the front of the class, facing the teacher, especially during exams to avoid distraction and having work transcribed may be beneficial in the future. SAMONAS Sound Therapy was also recommended, which Adam undertook. This therapy is intended to help assist brain integration and auditory function.

6.3.2 PHYSICAL DEVELOPMENT ASSESSMENTS

Observations and age appropriate tasks were presented to Adam in order to assess his level in various aspects of his physical development, including fine and gross motor skills as well as hand writing abilities (see Table 6.4 for results). The assessments provided mixed results with Adam demonstrating a number of strengths as well as weaknesses.

One area of substantial weakness for Adam was handwriting, and as a result he had been disinclined to do any writing task and had found it difficult to copy from the board. This weakness was demonstrated through his inability in testing, to cross the midline. Crossing the midline means that the right hand is used on the left side of the body. A lack of transference across the body hinders development of the dominant hand and hence development of optimal ability for all fine motor and

handwriting tasks. Further evidence of handwriting difficulty was displayed by his lack of ability to isolate movements between his head, shoulders and upper limbs. Control at a high level in this area is required for specific tasks such as handwriting. Adam did not have age appropriate skills in this area. The grip required for efficient writing is the dynamic tripod grip which Adam maintained for a period of time but as the work got harder, he found it difficult to maintain. As a result he tended to pull his thumb inwards which reduced the web space and resulted in increased writing pressure. An inappropriate pencil grip meant that movement when writing came from the knuckles which resulted in jerky movements across the page. Some of Adam's gross motor skills were not developed to an age appropriate level. He demonstrated some difficulty with stability around the hip region and with balance, both of which are required for gross motor skills.

While these signs appear subtle the fact that a number of difficulties were apparent means that Adam is working a lot harder than he should at his age to perform certain motor tasks. This can cause frustration and affect the quality of the motor skills, time taken to complete them and concentration on the task. (Report dated 20/04/04)

Adam's demonstrated areas of strength were in planning, auditory sequencing and visual perception. He was able to easily form an oblique line and triangle on a peg board, and could easily do a 20 piece jigsaw using shape and visual clues. On an assessment of his visual motor skills he scored on the high end of the normal range and visual perception skills were in the above normal range for his age, but his motor coordination was in the below average range. *"The discrepancy between these scores may suggest he is relying more on his visual perceptual skills than his motor coordination skills for writing and drawing"* (Report dated 20/04/04). It was obvious that Adam had learnt to use the skills he had in order to compensate for his disabilities.

Table 6.4 Results for Physical Development Assessments

Developmental Motor & Perceptual Skills	<p>Left right awareness - does not seem automatic.</p> <p>Laterality & integration – midline crossing with dominant hand not yet at an appropriate level. Some difficulty with convergence movements which affected pencil & paper work & copying & reading.</p> <p>Motor planning /spatial awareness/organisational skills/sequencing – demonstrated difficulty with simple gross motor activities when copying those shown to him or listening to those given by instruction. Had difficulty initiating a creative writing task & required encouraging. Able to easily form an oblique line & triangle in a peg board & could easily do 20 piece jigsaw puzzle using shapes & visual clues as well as a systematic approach.</p> <p>Movement & postural control, balance & co-ordination – balance was only fair & sequence of movements was less even. Unable to dissociate movement between hands & wrists & fingers which is required to develop to a very high level to control pencil when writing. Stability between head, shoulder & upper limbs which Adam had difficulty with needs to develop to a high level to perform ball skills & handwriting.</p> <p>Fine motor observations – significant difficulty establishing a neat pincer grip in both his left & right hands. Significant difficulty with in hand manipulation.</p> <p>Colouring in – accurate but physical effort that went into this task was more than would be expected.</p>
Handwriting Bonney & Perks – handwriting difficulties assessment	<p>Posture & Movement - Could maintain an upright trunk & head position.</p> <p>Tended to inefficiently weight bear through both arms rather than primarily his non writing arm.</p> <p>Right shoulder tense rather than relaxed.</p> <p>Left to right movement across the page tended to be a crawling arm movement rather than sloping arm movement, particularly evident when doing cursive writing where he seemed to put in effort from his whole body rather than just his fingers.</p> <p>Could efficiently stabilise the paper with non writing hand.</p> <p>Appropriately positioned paper slightly to the right of his midline with the top to the left, occasionally positioned paper with no tilt.</p> <p>Grip & movement - Frequently used a dynamic tripod grip which is appropriate but when work got harder tended to adduct thumb (pull it inwards) & slightly tuck it under his index finger resulting in a closed web space & increased writing pressure making it difficult to achieve distal finger joint movement required for fluent writing.</p> <p>Grip position from the tip was inappropriately close.</p>

	<p>Wrist tended to be in an efficiently extended position. Hand tended to be placed inefficiently on or above the line rather than below the line.</p> <p>Letter formation and movement</p> <p>Movement when writing mainly came from his knuckles due to restrictive pencil grip. Flow of movement was jerky & he had difficulty changing direction, movement was quite laboured with significant effort. Writing pressure when drawing was consistently excessive especially when doing his running writing. Could form all letters of the alphabet correctly. Size of writing fairly consistent but tended to vary when doing cursive writing. Slant of writing was reasonable & uniform. Spacing of writing was consistent.</p>
Handwriting speed test	Scaled score 25%ile within normal range for age
Visual motor skills	Visual motor integration test 81%ile - high end of normal
Visual motor integration supplemental tests	<p>Visual perception test – above normal Motor coordination test - below normal Discrepancy between above two suggests that he is relying more on visual perception skills rather than motor coordination for writing and drawing. (Report dated 20/04/04)</p>

The major effect of the physical difficulties Adam demonstrated was that his writing skills were severely hampered. Left-right awareness, part of the proprioception sense, is important in refining balance, and a critical component in handwriting skills, as is the ability to cross the midline with the dominant hand. These were not developed to an age appropriate level at the time of testing. As a gifted child Adam found it very frustrating not being able to translate ideas and thoughts into words on paper.

I think it might have been in Year one when I just kept on being able to figure out the easiest way to do certain things in maths and that, whereas like in handwriting I kept finding it tricky to get my hand to make the e's curved and perfect. (Interview 18/01/08)

Adam recognised that he found handwriting difficult and he would avoid doing tasks that involved handwriting. As a result his ability to initiate a creative writing task would not have been developed and would have been further hindered by the physical difficulties he demonstrated in the testing situation when asked to copy simple gross motor movements.

Recommendations made by the occupational therapist to overcome the deficits Adam experienced with respect to handwriting were:

- *therapy sessions;*
- *development of a home program to ensure regular practice;*
- *monitoring through the school year as handwriting is such an important component throughout primary school.* (Occupational and physiotherapist report 20/04/04)

6.3.3 DISCUSSION

Adam was initially identified as gifted as a result of assessment using the WISC III, and although a FSIQ could not be calculated due to the difference between the VIQ and the PIQ and this should have signalled problems, the school counsellor did not suggest further investigation to discover areas that Adam could have had a disability in, nor the possible impact of a disability on his learning. It was only his giftedness that was being considered and recommendations were made to cater for his giftedness but no consideration was given to helping him cope with his learning disabilities.

Additional testing was carried out because Adam went to therapy sessions with his younger brother and commented that he also had problems with handwriting and wanted help as well. This additional testing highlighted another source of his learning disabilities and the effects this was having on his learning. Again, though, each issue was treated individually. He was given sound therapy for auditory processing, occupational therapy for fine and gross motor skill deficiency and lenses and therapy for eyesight problems. No practitioner had considered the ‘big picture’ of how a program could be developed for Adam that would take into account his giftedness as well as his learning disabilities.

Adam himself had figured out that he had problems and that there were strategies he could put in place that would make things easier for him. He used the computer to a large extent to not only help with writing, but also as an organisational tool. He suggested that he utilise typing rather than handwriting, and that the computer also gave him access to a large array of resources. As he was not very organised the computer provided him with easier file storage, processes for editing and he could use the tools provided on the computer to create works of art. Using a computer also meant that he could access his information and emails whenever and wherever he had access to a computer. He could send data from home to school and vice versa (Interview 18/01/08).

As well as understanding that he found some things difficult, Adam knew he had good understanding in other areas.

Maths rules are very easy. As in maths it's simply because basically there's a formula that explains why and I can figure out the reason why. Spelling seems completely illogical, that 'i' has to go before 'e'. And 'ie' makes this sound whereas 'ei' makes that sound. I usually get there by basically just remembering. I can remember things that make sense and are much easier to understand. (Interview 18/01/08)

6.3.4 PARENT RESPONSE

Adam's parents realised that he was gifted with a learning disability after attending a support group meeting at which the guest speaker talked about IQ testing. It was mentioned at this meeting that if a child's VIQ score was different to their PIQ by a certain amount that would indicate they had a learning disability. As a result the parents initiated further assessments in order to discover what aspects of learning he had difficulty with.

The concept of trying to tie his learning disabilities and his giftedness together in a specific school program was not discussed by the parents or the school. Instead the school was approached to address the problem of bad behaviour and boredom. The

parents were advised to ask for Adam to be placed in an alternative year three class. Letters were written to this effect by the psychologist and other consultants. The school was uncooperative in this respect and instead suggested that the mother meet with the principal to discuss Adam's behaviour.

The principal said to me he wanted weekly meetings with me. I'm fine with that so I had these weekly meetings and all he'd say at the weekly meetings were, "Oh this week Adam's done this, this and this; there won't be any change until he improves his behaviour." These meetings were negative, there was nothing positive. (Parent interview 18/01/08)

The mother tried to suggest to the principal that the behaviour was not going to change until the classroom situation changed. Adam was eventually moved into the other Year three class, but this did nothing to alleviate the problems he was having, and a continued lack of understanding of the needs of gifted students was demonstrated by the class teacher and the school.

She couldn't understand how a nine year old could be bored and so I thought she doesn't know much about gifted children either if she can't understand that kids can be bored. (Parent interview 18/01/08)

And

The principal was the main problem at the school because he was saying that Adam wasn't gifted because he wasn't good at everything and obviously he didn't even know what the word gifted meant. The school counsellor told me he knew nothing about gifted. (Parent interview 18/01/08)

Adam had also summed up the situation and realised that it was the school and in particular, the principal who lacked the understanding of gifted education and the willingness to provide appropriate educational opportunities. Adam was present at interviews between his parents and the school principal.

I remember Adam trying to talk to the principal and I was there and it was really interesting that he was trying to engage the principal on an adult

level to discuss the causes and problems and the like and he just wouldn't engage with him. He would just not recognise that someone Adam's age had a right to talk at that kind of level to him about the nature of the problems and how things could be improved. It was terrible to watch. (Parent interview 18/01/08)

Adam's parents were advised by an educational professional that they had consulted to move the boys to a new school. Initially they were reluctant to do this as they felt it was a rather drastic step and that the situation would not be any different in another school. Eventually though, the parents admitted that it was imperative that the boys were moved to a different school. After phoning some schools and, as a result of a discussion with one principal who stated that the policy of that particular school was to test the students and then put them in ability groups, the parents moved both boys. Adam and his parents felt that this new school responded more appropriately to his academic needs as well as his social and emotional requirements. Actions by the school indicated an understanding and knowledge of the needs of gifted students.

The principal herself is gifted I think, it's quite obvious and the way she took us around. It was obvious she had the right approach. She started to describe how she approached problems with open ended problem solving for the kids. She talked about what she had done with some other gifted kids in the school and how she had brought them on and she was really switched on to it. (Parent interview 18/01/08)

Adam enjoyed Years five and six more than the other years of primary school. He had a teacher who challenged him in his learning, particularly with respect to computers.

6.3.5 ADAM'S UNDERSTANDING

Adam had an understanding, appropriate to his age, that what was happening at school was not providing the right educational experiences for his level of intellectual ability. He responded accordingly. In Year three he began to throw

temper tantrums, he dropped out of all the extra-curricular activities he was participating in, and he put on weight, which his father states he is still carrying after four years. Several times during the interview Adam stated that he “*didn’t basically deal with it*” (Interview 18/01/08) referring to the frustration he felt and his feeling of powerlessness.

When discussing schooling, Adam articulated some of the qualities he would have liked to see demonstrated by the teachers and the level of work expected of students. These were:

- *Teacher skilled in most areas;*
 - *Friendly teacher but strict enough to make sure that you don’t get out of good work habits and stuff;*
 - *You would want every day to have a challenge you know;*
 - *The work set just a tiny bit above your current level so that you slowly rise up;*
 - *It would probably be try as hard as you can to basically just suit their needs and like in work and stuff, adequate level work so it’s a challenge.*
- (Interview 18/01/08)

He was aware that even though in Years five and six he had “*good teachers*” he was still bored because he was “*at their level in some areas but well above in others*” (Interview 18/01/08). An understanding of how difficult it is for a teacher to meet the needs of all students was demonstrated by Adam when asked if the teachers recognised that he was above the rest of the class in some areas. “*I think they knew but they couldn’t teach one student algebra while teaching the whole class long division*” (Interview 18/01/08). To fill this gap Adam challenged himself. He did extra work at home and with the use of a Year eight textbook was teaching himself algebra. He felt he was transferring the knowledge gained by doing algebra to other aspects of his life. “*Doing extra things at home – it helped me cope with the boredom of school. I have been learning algebra and stuff so now I can apply algebra to situations and stuff*” (Interview 18/01/08).

There is a very real possibility that Adam is underachieving and has used his intellect to provide teachers with work that he knows will gain him a high mark.

When discussing whether he would like the opportunity to have input into set tasks he responded, *“well I don’t really need that opportunity because I find it fine to do it the way they set it as that would probably get me the best mark”* (Interview 18/01/08).

The researcher continued the discussion:

Researcher: So you think, do it the way they ask then you’re going to get better marks rather than doing it the way you feel it should really be done?

Adam: *Anyway I can do it that way and then when I’m older I can do it my way.*

Researcher: So basically what you’re saying is that you know what’s expected of you in the classroom so you try to give that even if you don’t agree with it.

Adam: *Yeah I try to do that as much as possible.*

Researcher: Doesn’t that frustrate you?

Adam: *Yes but then you get over it usually.*

Researcher: How do you deal with your frustration?

Adam: *I’m not sure, I’ve basically been holding it in all year.* (Interview 18/01/08)

Adam is looking forward to high school *“because it will be more interesting than primary. I think I’ll be challenged rather than have to create challenges”* (Interview 18/01/08). He has been accepted into the Gifted and Talented Program at a comprehensive high school. In order to get into the program, Adam had to undergo testing in English, maths, and writing. He stated that it was quite tricky and some questions were harder than others.

6.4 MARK

6.4.1 IDENTIFICATION

Mark was not as keen as Adam to be interviewed. He did not appear as relaxed or as comfortable talking with the researcher. The interview took place during the school holidays and this could have had some effect on Mark as he obviously enjoyed the school holidays far more than he enjoyed school. While this is probably generally fairly common amongst children, Mark's reason for enjoying the holidays was because they were more "*challenging*". He seemed to have difficulty articulating responses about some of the points of the discussion with the researcher, but on the other hand he was very definite and to the point about others. Mark became quite animated when talking about activities that he enjoyed such as canyoning.

Mark was not assessed until he repeated Kindergarten, despite his mother feeling that things were just not quite right while he was still at preschool.

I felt he had issues in preschool. I talked to his preschool teacher and she sort of said he's probably just a bit slow developing, he'll probably catch up. (Parent interview 18/01/08)

These concerns were reinforced when his mother was considering a list of criteria that helped parents decide if their child was ready for school. Completion of this checklist indicated that Mark was not ready for school. Despite this, his parents sent him because "*he was old enough to go*" (Parent interview 18/01/08). The possibility that Mark might have problems was further reinforced when during the first term of Kindergarten the school sent home a questionnaire related to speech pathology. If the response to more than a certain number of items on the questionnaire was no, it was suggested that a speech pathologist be consulted. The parent thought this a bit strange as one of the questions was: '*Can your child dress himself?*' Despite the fact that the parent responded positively to the items on the list related to speech, she consulted with a speech pathologist who gave the parent a questionnaire to be completed by Mark's teacher.

The report completed by the teacher noted that Mark had “*mild or significant*” problems. This was in direct contrast to Mark’s school report, completed by the same teacher, on which she had rated him as an average student. No problems were highlighted or noted in the school report. The parents were aware that Mark had a problem but they felt it was related to his hearing not his speech.

The main problem with Mark that we noticed was you’d talk to him and it’s as if he didn’t hear you or sometimes there was like a delay of about four seconds before he’d answer you on a simple question. And we thought that was the key to it, there’s something wrong there even though he spoke very well. (Parent interview 18/01/08)

Mark himself was aware that he had a problem. “*I think it’s more like I hear it but I’m not really listening to it*” (Interview 18/01/08). The speech pathologist suggested that the parents seek a psychological assessment, which they did. The psychologist conducted a range of assessments with Mark.

6.4.1.1 IQ ASSESSMENT

Mark was assessed on the WISC - III at age 6 years 3 months by a private registered psychologist and the results indicated that he was in the very superior range for his VIQ and in the superior range for his PIQ. These results indicated that Mark was a gifted student and as such should have been provided with an appropriate educational program to address his special needs. The difference between the VIQ and PIQ were indicative of a learning disability which should also have been addressed (see Table 6.5 for results).

Table 6.5 Results of IQ Assessment

WISC III DOA 05/02/04 CA 6yrs 3mths			Sub tests	Sub tests scaled scores
Verbal IQ (VIQ)	Very superior range	140- 99.6%ile	Information	14
			Similarities	15
			Arithmetic	18
			Vocabulary	18
			Comprehension	19
Performance IQ (PIQ)	Superior range	125 – 94%ile	Digit span	14
			Picture completion	13
			Picture arrangement	11
			Block design	19
			Object assembly	19
			Coding	6
			Symbol search	9
Full Scale IQ (FSIQ) Index summary scores	Very superior range	135 – 99%ile	Verbal comprehension	137 – 99%ile
			Perceptual organisation	133 – 99%ile
			Auditory processing	134 – 99%ile
			Processing speed	88 – 21%ile

The psychologist informed the parents that Mark was “*in the top 1% of IQ but that he had auditory processing disorder*” (Parent interview 18/01/08). The assessor noted that Mark had weaknesses in hand/eye coordination and auditory and visual sequencing, as demonstrated by the results of the Coding, Symbol Search, Digit Span and Picture Arrangement subtests. His scores were not due to his inability, but rather to his lack of pace. As a result the assessor noted that Mark would have had difficulty completing written work within a set time frame. Although his score on the Digit Span subtest was not below average, the assessor noted that Mark had trouble reversing the digits. This demonstrated that integration – communication between the two hemispheres of the brain — was not fully established, resulting in

auditory sequencing and processing difficulties which affected reading, spelling, listening and concentration. The score on the Picture Arrangement subtest, which tests visual perception and sequencing as well as the ability to use cause and effect relationships, was lower than expected indicating that Mark was taking too long to determine the order of what he was seeing. His processing speed placed Mark at the 21st percentile and therefore below average which demonstrated very clearly that he had a disability in this area which may have made much of his school work difficult (Report of WISC III administered 5/2/04).

Strengths were noted in the areas of general knowledge, concept formation, arithmetic, vocabulary knowledge, logical reasoning in everyday situations, attention to visual detail, visual organisation and spatial perception (Report of WISC - III administered 05/02/04).

6.4.1.2 A Neale Analysis of Reading (3rd Edition) – Form 1 – Assessment

An initial assessment using the Neale Analysis of Reading (3rd Edition) – Form 1 was attempted at the same time as the IQ assessment was undertaken, but Mark's skills had not developed to the point where it could be used effectively so the Schonell Word Recognition Test was used, giving him a recognition ability of 6.10 years. This test indicated that Mark recognised words as whole units and did not sound out new words. Errors on this test showed that he had some difficulty with letter perception which made it hard for him to tell the difference between letters such as 'p', 'b', 'q', 'd' (Report of WISC - III administered 05/02/04).

A second Neale Analysis of Reading (3rd Edition) – Form 1 was administered after Mark had undergone various therapies and at an older age. This assessment showed significant improvement which indicated that he was then performing at a level beyond his chronological age (see Table 6.6 for results).

Table 6.6 Results of Neale Analysis of Reading (3rd Edition) – Form 1

5/02/04 CA 6yrs 4 mths	
Test	
Reading Accuracy	6.10 yrs
Comprehension	Not formally tested
Rate - slow	Informal assessment only
5/11/04 CA 7yrs	
Accuracy	8.04yrs
Comprehension	8.9 yrs
Rate	Not tested

6.4.1.3 South Australian Spelling Test

This test was conducted twice, with Mark refusing to complete it the first time. The second time he was assessed was after he had undergone various interventions and his results improved from a spelling age of <6 years to a spelling age of between 7.6 and 7.8 years. His chronological age at the time of the second test was 7 years. Mark was still reversing the letters ‘b’ and ‘d’ (Psychologist Report 2004).

The Macquarie University Word Attack Skills Test was also administered at this time with the result that Mark pronounced the letters ‘s’, ‘f’, ‘t’ as, ‘suh’, ‘fuh’ and ‘tuh’ which made it difficult for him to later decode words properly (Psychologist Report 2004).

6.4.1.4 Auditory Assessment

Mark was assessed on several occasions over a period of time using the Threshold Order Processing Test (TOP), on which initial testing indicated that he had a problem with auditory processing (see Table 6.7 for results). The evaluations were undertaken as he completed the different stages of SAMONAS Sound Therapy. For the TOP test the normal speed of processing for visual and auditory information is 40 milliseconds (ms). Mark’s results were higher than the normal speed indicating that he had significant trouble with auditory processing. Difficulty with

auditory and central (integrated) processing makes it difficult for a child to read, spell, listen and follow directions (Psychologist Report 2004). With therapy he managed to improve his scores and hence his ability.

It should be noted here that this SAMONAS sound therapy was recommended by the psychologist and administered within that practice. The parents later consulted a complementary therapies doctor who also had Mark assessed using the TOP test and as a result recommended further SAMONAS sound therapy. This additional therapy was undertaken, but the parents felt that the greatest gain had already occurred, and that minimal advantage was gained after the additional therapy (Parent interview 18/01/08). Results from the additional testing were not available to the researcher.

Table 6.7 Results of Auditory Assessments

Threshold Order Processing Test (TOP)	5/2/04	9/8/04	5/11/04
Visual processing	97ms	Not retested at this time	Not tested at this time
Auditory processing	245ms	136ms but discontinued	136ms
Visual/auditory	122ms	114ms	79ms
SCAN Test	5/2/04 CA 6yrs 3 mths	9/8/04 CA 6yrs 10 mths	
Filtered word test	2%ile	75%ile	
Auditory Figure Ground Test	16%ile	63%ile	
Competing words test	37%ile	99%ile	
Current processing level	5.7yrs 8mth delay	10.9yrs	

Note: Normal speed of processing for visual & auditory information for a child over 6 years of age is between 40 – 60 milliseconds. Average scaled scores for the SCAN tests is 10 or 50th percentile

Mark was assessed on the SCAN test before and after therapy (see Table 6.7 for results). The initial testing demonstrated that his auditory processing was severely limited. He found it hard to register many of the high frequency sounds such as ‘s’,

‘ch’, ‘sh’, ‘th’, ‘f’ and had trouble understanding the speaker if the person moved about, was turned away or spoke from some distance away (Psychologist Report 2004). As a result of these difficulties Mark was easily distracted if there were auditory or visual distractions around him.

Therapy significantly improved these auditory problems, with Mark moving from a developmental delay to performing at an above age level. Poor ability to process sound meant that Mark only registered a part of each word and the brain would combine the parts to form a new word. The report noted that “*Mark is a very intelligent child, who is able to use that intelligence to make sense of much of what he is hearing, as long as the brain can process fast enough*” (Psychologist Report 2004).

The significant improvement as a result of therapy for Mark meant that he was better able to discriminate sounds and focus his attention on the speaker while filtering out background noise (Psychologist Report 2004). As a result of consultation with the psychologist various recommendations were made. These were continued work with an occupational therapist and physiotherapist, discussions with the school so that measures could be put in place to help Mark, and SAMONAS sound therapy.

The various interventions were undertaken and with further assessment additional recommendations were made, including participation in a phonics program and a multisensory approach to his learning. The final report suggested that Mark be taught more visually with verbal back up, that the phonics program be continued and that he be given work above a Kindergarten level otherwise he would be bored. The parents followed the recommendations and worked with various therapists to help Mark develop his skills and improve his learning but with little support from the school.

6.4.1.5 Visual Assessment

Mark was assessed by a behavioural optometrist. This assessment concluded that he was mildly longsighted with good focussing flexibility but poor focussing stamina

which meant that the effort required to maintain focus made it difficult for visual attention when completing close work. In addition the optometrist found that he had difficulty maintaining good visual function and that this would impede his academic progress particularly in reading and comprehension. The recommendation was to prescribe stress relieving lenses for close work with yoked prisms incorporated into the prescription to expand peripheral awareness. These lenses were to be worn for all learning tasks as well as computer and music (Report dated 04/07/05).

6.4.2 PHYSICAL DEVELOPMENT ASSESSMENTS

Observations and age-appropriate tasks were presented to Mark in order to assess his level in various aspects of his physical development including fine and gross motor skills as well as handwriting abilities.

Mark displayed significant difficulties with some gross and fine motor skills which had affected his ability to perform in the classroom and in some respects had meant that he had displayed characteristics similar to Attention Deficit Hyperactivity Disorder (ADHD). He demonstrated poor upper body muscle control which led to him becoming uncomfortable when sitting for prolonged periods of time. As a result Mark would fidget in order to find a more comfortable position. Constant movement meant that his concentration was affected, hence hindering his learning.

An inability to cross the midline was demonstrated by Mark when using the pegboard. He tended to use his right hand on the right side of his body and the left hand on the left side. A lack of transference across the body hinders development of the dominant hand and hence the development of optimal ability for all fine motor and handwriting tasks. Mark's problems with handwriting were further exacerbated by his inability to establish an appropriate pincer grip when holding his pencil. Instead he tended to use all his fingers or a three-finger pincer grip. This indicated that he was having difficulty isolating and controlling finger movements. Colouring in and cutting out were also managed awkwardly. Movement when writing came mainly from his knuckles, resulting in jerky movements. He had difficulty forming the letters 'a', 'b', 'c', 'd', 'f', 'g', 'l', 'p', 'q' and the numbers '1', '3', '6', '7', '8'

and '9'. Letters were started from the base rather than the top, and the letters 'b' and 'g' as well as the numbers '3' and '7' were reversed. The number '9' often looked like 'g' and although the size and spacing of his writing was consistent he had difficulty using the line accurately (Psychologist Report 2004).

Mark's results in visual motor skills indicated a discrepancy between the visual perceptual and motor coordination subtests indicating that he was relying more on his visual perception skills rather than his motor coordination skills for drawing and writing. Motor planning, organisational skills, spatial awareness and sequencing were assessed using a 20 piece jigsaw. He had problems using shape and visual clues placing a corner piece in the middle of the puzzle and a middle piece on the edge. He required prompting when shifting his attention between the puzzle and the picture on the box. Mark was not systematic in the way he undertook and completed this task.

Table 6.8 Results of Physical Development Assessments

Developmental motor & perceptual skills	<p>Left right awareness was still developing – had difficulty with proprioception required for gross motor skills. Foot placement not always accurate & this is important in helping refine balance skills & critical component in development of handwriting skills as they become faster & more efficient.</p> <p>Laterality & integration - not crossing the midline of his body efficiently or age appropriately. When using the pegboard tended to use right hand on right side of body & left hand on left side of body. Crossing the midline of the body with the dominant hand is important to help develop optimal skill levels in that hand for all fine motor handwriting tasks. Difficulty with activities that required the use of opposite arm & leg. Some difficulty with convergence which affects pencil & paper work as well as copying & reading.</p> <p>Motor planning/spatial awareness/organisation/skills/sequencing – Could do a 20 piece jigsaw independently but had difficulty using shape & visual clues e.g. placed corner piece in the middle of the puzzle & vice versa. Not very systematic at doing puzzles. Difficulty shifting attention between the puzzle & picture. Did not always cross the midline when asked to copy simple arm & leg movements. Good at gross motor sequences.</p> <p>Movement & postural control, balance & coordination – some signs of poor alignment & muscle imbalance, could not sit long without propping hands behind or feeling uncomfortable which caused the body weight to fall behind the base of support & changed the way the muscles worked. This contributed to increased restlessness & fidgeting often affecting concentration when sitting for long periods. Sometimes used speed & momentum in movement assessments rather than demonstrating control. Balance on one foot reduced for age & constant re-adjusting observed. Early reflex movement patterns still affecting movement. Difficulty dissociating movement between head, shoulders, upper limbs & trunk which can affect posture or control during specific skills requiring the use of upper limbs. These patterns can make it harder for some children to learn tasks such as swimming, bike riding & writing. Ability to isolate movement in hand, wrists & fingers reasonable for age but had a little difficulty isolating finger movement with overflow of movement into other fingers & this control important for fine motor control & writing.</p> <p>Fine Motor observations – difficulty establishing a neat pincer grip, tended to use all his fingers or a three finger pinch grip which indicated that he was having difficulty with isolated & controlled finger movement. Significant difficulty with his in-hand manipulation skills.</p>
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	<p>Cutting out – looked quite awkward with left arm significantly abducted away from his body. Had slight difficulty with paper hold.</p> <p>Colouring in – difficulty changing direction with his fingers & tended to turn the page to assist him. Difficulty with accuracy of this task.</p> <p>Line Drawing – fairly accurate with this task but had to work hard physically to achieve good results.</p>
Handwriting Bonney & Perks – handwriting difficulties assessment	<p>Posture & Movement - Maintained an upright trunk & head position. Tended to weight bear through non writing arm, which was appropriate Left shoulder tensed rather than relaxed. Left to right movement across the page tended to be a crawling arm movement rather than sliding arm movement. Efficiently stabilised the paper with non writing hand. Positioned paper in the midline & frequently the paper had no tilt although he did at one time tilt it to the left. If not taught early left handed children may compensate for lack of tilt by further abducting the left arm away from the body & hooking their wrist when writing.</p> <p>Grip & movement - Tended to use lateral tripod grip where the thumb is significantly wrapped around the index finger and shaft of the pencil resulting in a very closed web space which inhibits the distal finger joint movement. This movement is required for fluent writing. Held pencil inappropriately close to the tip and wrist was in an efficiently extended position. Hand in relation to the line was above rather than below the line.</p> <p>Letter formation and movement - Movement when writing mainly came from his knuckles rather than distal finger joints. Flow of movement was jerky & he had difficulty changing direction, pressure tended to be moderate. Had significant difficulty with letter formation. Particularly with ‘a, b, c, d, f, g, l, p, q,’ also with forming numbers ‘1, 3, 6, 7, 8, 9’ with many letters starting from the base rather than the tip and reversed letters ‘b’ & ‘g’ and numbers ‘3’ & ‘7’. Formed the number ‘9’ like a ‘g’. Size of writing fairly reasonable & consistent as was the spacing of his writing. He had significant difficulty accurately using the line.</p>
Visual motor skills	Visual motor integration test – 99.1%ile. Above normal for his age.
Visual motor integration supplemental tests	Visual perception test – 99%ile – above normal for his age. Motor coordination test - 63%ile – middle of normal range for his age.

	Discrepancy between the above two suggested that he was relying more on visual perception skills than motor coordination for writing and drawing. Children with this discrepancy are often frustrated because they can see what they have to draw but their hand doesn't always reproduce it to the accuracy of what they see.
Integration tests	Some difficulty crossing the midline when drawing figure 8 on its side Unable to cross the midline when drawing 3-4 rows of counter clockwise loops across a piece of paper. Most of the loops misshapen.
Handwriting difficulties assessment	Left hand dominant hand. Pencil grip satisfactory with good finger placement but grip appeared to be slightly looser than usual. Found drawing loops across the page and on their side (figure 8s) difficult.

Mark's progress at school may be affected in many ways as a result of the disabilities he demonstrated during the various assessments undertaken. He was aware that he heard without really listening, therefore missing instructions and information. Sitting for prolonged periods of time was uncomfortable and he fidgeted in class which was distracting not only for him, but for the teacher and other students in the classroom. Inability to grip a pencil correctly would produce discomfort in his hand and extend up his arm due to the effort he required in order to write. Frustration would be an issue considering his reliance on visual perception skills rather than motor coordination skills for drawing and writing. He was aware of this and explained it by saying that *"I have a plan in my head of what it would look like but it doesn't always work out and I want it to"* (Interview 18/01/08).

Recommendations were made to help overcome the disabilities Mark was experiencing and which related to his developmental motor and perceptual skills. The recommendations were to start twice weekly therapy sessions in order to get a regular program under way, the development of a home program to ensure regular practice, and re-assessment after the therapy sessions had been completed (Occupational and Physiotherapist report 03/10/03).

6.4.3 DISCUSSION

Mark was a gifted student who was initially identified for his disabilities and not his giftedness. His disabilities were the main focus of his educational program to the extent that the school required him to repeat Kindergarten because he was performing at the bottom of the class. The repetition was undertaken in a Kindergarten/Year one composite class and it was at this stage that the parents had an IQ assessment completed. Despite the IQ results, the classroom teacher continued to tell the parents that he could not possibly be in Year one and the teacher *“just put to one side the fact that he had a high IQ and was only seeing his disability”* (Parent interview 18/01/08).

Even though Mark was aware that he had difficulties he did not have the skills to develop strategies to overcome them effectively. This was possibly due to his age and also that his disabilities were more obvious than his giftedness. At no time was an integrated program put in place that considered his giftedness as well as his disabilities. Instead each disability was managed separately with sound therapy for auditory processing, occupational therapy for fine and gross motor skill deficiencies and lenses for eyesight problems. No practitioner had considered the ‘bigger picture’ of a program that took into account his giftedness as well as his disability. The closest possibility was recognition by the educational psychologist that he was gifted, but that he also had an auditory processing disorder.

Mark understood that he had problems but he also recognised that he was good at Maths. He described this as *“my best work related subject is maths”* (Interview 18/01/08). He liked art and sport but didn’t consider these as subjects. Despite this ability and liking for maths his mother stated that he didn’t really enjoy doing it, and she felt that this was probably related to his handwriting issues. He was quite happy to do maths when someone wrote the answers for him (Parent interview 18/01/08).

6.4.4 PARENT RESPONSE

Mark's parents were aware that he had a disability before he started school. It was not until he repeated Kindergarten, though, that his parents had an IQ as well as other assessments undertaken and that they learned he not only had various learning disabilities but he was also gifted. They had thought that he was average up until this assessment. The school was approached with the results of the assessment but they chose to ignore the IQ test results and instead focused on his disabilities and continued the repetition of Kindergarten. The school did not provide a specific program to assist him with his disabilities as it considered repeating Kindergarten was meeting his needs; instead the parents were undertook various programs outside school (Parent interview 18/01/08).

When the parents changed schools, they provided the new school with all of the reports from the various assessments and the school was informed that Mark had repeated Kindergarten. The parents were wondering which year he would be placed in at the new school. Initially he was placed in Year one but after observations and discussions with the parents he was placed in Year two. This was the age-appropriate year for him. The understanding and provisions in the new school were as beneficial for Mark as they were for Adam.

One of the intervention programs that Mark undertook was SAMONAS Sound therapy. *"Sound therapy helped a lot. After a year of that, was probably back to normal because we noticed that when you spoke to him you didn't get that delay like there had been there before"* (Parent interview 18/01/08). At re-assessment Mark was still not at the age-appropriate level but the psychologist noted that that was probably as good as he was going to get. The mother felt that he still had a problem and wondered what she should do. After a support meeting she learned about a doctor who practised complementary medicine, who re-assessed Mark and stated that the therapy should continue until the child reached the age-appropriate level. Despite continuing the therapy the parents felt that the greatest improvement had already occurred.

Occupational therapy and physiotherapy programs undertaken for hand-eye coordination, they felt, did not really make a difference as the parents did not see any substantial improvement in these skills (Parent interview 18/01/08).

6.4.5 MARK'S UNDERSTANDING

Mark was somewhat reticent to talk but he did articulate some very definite opinions about certain aspects of his schooling and life. He demonstrated this with not only fluent speech but also an emphasis in his tone of voice. He had definite opinions about school and homework.

I just don't like school and I really don't want to waste the holidays. I don't want the holidays to go by without me doing many really good things.

And,

*The main thing is homework, I absolutely **hate** homework. It's so annoying having to review things you already know because I don't exactly see how asking questions in a book is going to help me learn that much.* (Interview 18/01/08)

This hatred of homework spilled over into his extra-curricular activities some of which he discontinued. *"I had singing lessons. They had homework and voice exercises and as I said I hate homework really"* (Interview 18/01/08).

Mark was quite emphatic that he hated school but when the researcher discussed this with his parents their response was that *"we don't think he hates it, but he doesn't really enjoy the lessons, and doesn't get much out of it. He doesn't seem more unhappy in term than in the holidays"* (Parent interview 18/01/08). He did concede though that the teacher he had the previous year displayed some of the qualities he thought would be ideal in a teacher. *"She did understand things and the way she thinks"* (Interview 18/01/08). With respect to the work given in the classroom Mark would like less but harder and more challenging work, and despite his hatred of homework he would also prefer less but harder homework (Interview 18/01/08).

6.4.6 DISCUSSION

Adam and Mark both presented with Auditory Processing Disorders, handwriting difficulties and visual difficulties with varying degrees of disability. This meant that they have undertaken the same intervention programs and supported one another. In the case of sound therapy which required the purchasing of a CD player, headphones and CDs it was only necessary to buy one rather than two, although additional CDs were purchased for Mark as his disability was more severe than Adam's. Programs to improve fine and gross motor skills, as well as handwriting were completed together at home.

Adam, being older and with a lesser degree of disability, had begun to develop ways to compensate for his disabilities. With both boys having similar disabilities, Adam helped Mark with strategies that had worked for him.

6.4.7 FAMILY EFFECTS

Having two children both of whom were gifted with learning disabilities meant that there has been a cost to the family financially, in time, in research, in planning appropriate family activities as well as emotionally. The family paid for private assessments, intervention programs and counselling. The parents consulted psychologists, occupational therapists, physiotherapists, optometrist, and a complementary therapies doctor; purchased supplements; and implemented intervention programs.

The family has had to cope with the emotional effects on the children, with Adam throwing temper tantrums and withdrawing from all extra-curricular activities. Mark *“hates school and homework even if it is practice related to after school activities”* (Interview 18/01/08). The time involved in taking the boys to the intervention programs and continuing the program at home has meant a balancing of both the boys' and the parents' commitments. Undertaking assessments and consulting with various professionals in the private sector became very expensive, very quickly.

Even though the parents had consulted with professionals and were prepared to share this information and work with the schools, they had to endure scepticism and disbelief from school teachers and principals. The school's reaction highlighted for the family that there are many in the educational field with little or no understanding of gifted education. The relief and understanding they felt when a school demonstrated understanding of their boys and ways to manage them was enormous.

At one time Adam had done something wrong and the normal punishment was to sit on the verandah for lunchtime or something like that but she said that wouldn't work for Adam, wouldn't do him any good so she took him to the library and was teaching him to research in the library. (Parent interview 18/01/08)

Adam's father was quite impressed that the principal understood that punishing Adam did not work but 'time out' worked because it involved an alternative activity or even an opportunity to get away from the classroom pressures.

He used to need to get away particularly in the first year and they worked out an arrangement where he could leave the classroom but he had to stay in sight. She just sat down and negotiated it with him. (Parent interview 18/01/08)

Adam's parents recognised that, in order to acknowledge their boys' characteristics, strategies were required not only at school but also at home. To achieve this they have taken into account the following when planning family activities:

- *We do modify behaviour;*
- *You don't go anywhere you've got to wait in a queue (this for the father as well as the boys);*
- *We make sure they have a fairly active and varied life;*
- *We try and plan that there's something to do most of the time;*
- *Plan activities like going to the beach where they can run wild rather than somewhere indoors;*
- *Indoors just doesn't work;*

- *Organised activities that are heavily organised, we avoid those.* (Parent interview 18/01/08)

The parents acknowledged that parenting had at times been “*awkward to difficult*” (Parent interview 18/01/08). They had to consider that there are some places that they just can’t take their boys and as a result they have “*just had to choose a bit more and think about it a bit more*” (Parent interview 18/01/08). Despite having to be careful about family activities they see many advantages as well to their situation.

I don’t think it’s all bad because I mean you have to engage a lot more with the kids and find really good activities for them to do. I don’t think it’s necessarily detrimental and we share a lot of time with the kids compared to most, I think far more. We do more things with our kids than most people. (Parent interview 18/01/08)

Adam and Mark got on well together most of the time and were a support for each other when experiencing difficult times at school. “*I think they give each other moral support even if things were going badly at school they could play with each other*”, although “*Adam did sometimes take it out on Mark in that really bad year and bullied him a bit.*” Generally, they got on well together. “*They are peas in a pod, they play so brilliantly together*” (Parent interview 18/01/08).

Overall this family gave the impression that they are coping reasonably well with having two boys who are both gifted with learning disabilities. The school situation at the time of this study was stable; there were ongoing intervention programs, awareness that there were still social and emotional issues as a result of earlier years, and recognition that there are positives as well as negatives to the situation in which they had found themselves. A support group had played a large part as a source of information and provided the parents with the realisation that they are not the only ones who have children who are gifted with learning disabilities and have serious issues with schooling. It was an advantage that the parents had the resources to help their boys and the understanding and ability to find relevant information.

6.4.8 CONCLUSION

As a result of participant feedback, Adam's and Mark's father noted that the issues and processes he had been through as a result of helping his sons had a positive impact on him as an adult. He recognised that the traits his boys displayed were also applicable to him, and he now understands better the social issues he suffered at school. *"I knew I was different to all the other kids, I had a completely different perspective, even within the top academic class that I was middle ranked in – most of it was a revelation to me"* (Email dated 30/01/09).

This journey he had taken with his sons had a profound effect on his working life and his relationships with others. He has become aware that his abilities are stronger and less common than he originally thought. He has become more patient and realistic when dealing with other people. *"I now get strong praise as to how well I work with people; quite a turn around. I suspect my career might have taken a different path had I found out this stuff when I was a bit younger"* (Email dated 30/01/09).

Adam's and Mark's father also noted that in earlier years he had been considered to have potential and was sent to many expensive management courses in order to fix his *'Achilles heel'* of people skills. Despite his best efforts, the training did not have an effect. His advice was that if they had looked for visual spatial skills, giftedness and even ADHD indicators it would have been more effective instead of trying to pigeonhole him and taking the *'management consultation'* approach. But in his words *"not necessarily more lucrative to those consultants"* (Email dated 30/01/09).

CHAPTER 7

CASE STUDY 3

EMMA

7.1 INTRODUCTION

This chapter will discuss the process of identification of Emma as gifted with learning disabilities, the interventions undertaken, and the effects on the family and Emma of being identified as gifted with a learning disability.

7.2 BACKGROUND INFORMATION

Emma is an only child who lives at home with both of her parents. Her mother was an administrative assistant and her father works for a Federal Government Department in an administrative capacity. She attends an independent co-educational school in the Sydney Metropolitan area in Australia. At the time of the research Emma was in primary school.

Emma was identified as being gifted with a learning disability after starting school. Prior to this her parents had no idea that she was gifted or had a learning disability. Emma suffered from otitis media (middle ear infections) as a young child and had grommets inserted at the age of 3 years and 6 months. Constant ear infections are known to significantly affect a child's language development. It was not until Year one that an IQ assessment was undertaken because Emma was not reading at the same level as her peers. As a result of a consultation with a private extension centre for help with her reading it was suggested that Emma be IQ tested. It was as a result of this testing that Emma was identified as not only having a learning disability, but also as gifted. This information was a surprise to her parents and marked the beginning of a journey of continual assessment - some of which presented conflicting information - and interventions. *"I was shocked. I didn't know. I had no idea that she was gifted in any respect"* (Parent interview 12/01/08).

7.3 IDENTIFICATION

Emma was happy to be interviewed by the researcher, but at times she displayed fidgety and restless behaviour. On various occasions she was furtive in her demeanour as she responded to some questions or remarks posed by the researcher. A possible explanation for this behaviour could be the result of the vast number of assessments and interventions that she had been subjected to, her feelings about this testing and her desire not to let onto her parents how she felt about this. *“I just want to stop doing all these test things. It’s just interfering and stuff like that”* (Interview 12/01/08). This sentiment is perfectly understandable as this chapter unfolds and the amount of testing that she had been subject to becomes apparent.

7.3.1 IQ Assessment

At age 6 years and 5 months a WISC - III was conducted by a private psychologist, followed by a WISC IV at age 8 years and 1 month, and the Stanford Binet Intelligence Scale: Fifth Edition (SB5) at age 9 years and 1 month by a different independent psychologist. Each of these assessments delivered a diverse, and at times conflicting, range of results which highlighted not only Emma’s giftedness but also her learning disability (see Table 7.1 for results). All IQ reports noted that her Non-Verbal Reasoning skills were much better developed than her verbal reasoning skills. The significant differences between these scores on each of the IQ tests indicated that each Full Scale IQ (FSIQ) should be disregarded and individual subtest scores or index summary scores considered independently.

The Full Scale IQ (FSIQ) is usually the most reliable score from the Stanford Binet Intelligence Scale: Fifth Edition (SB5) because it uses all facets of the test. However, Emma has a 23 point difference between her Non Verbal IQ (NVIQ) & Verbal IQ (VIQ) that skews the FSIQ and renders it meaningless. The two domains must be considered separately. (Report dated 12/12/05)

The IQ results overall clearly demonstrated that Emma was not only gifted but that she had a serious learning disability affecting her ability to perform verbally-related

tasks. She would have found the large disparity between her Non-Verbal and Verbal skills extremely frustrating. It was therefore essential if Emma was to achieve close to her potential that both her giftedness and learning disability were considered when designing an educational program for her.

Substantial strengths and weaknesses, as well as contradictions, were highlighted in all the IQ test results. Emma's strengths were her ability to analyse, synthesise and reproduce abstract designs, as well as excellent visual motor coordination and visual processing abilities as demonstrated by her high scores in the Block Design and Symbol Search subtests in the WISC - III, and the Picture Concepts subtest in the WISC IV. Her strong perceptual skills were highlighted by her results in all IQ assessments. In the WISC - III her Perceptual Organisation score was on the 99th percentile, in the WISC IV, Perceptual Reasoning index was on the 98th percentile and in the SB5 fluid reasoning was on the 97th percentile. This skill drew upon her unlearnt fluid intelligence and supported the conclusion that in all the assessments Emma had considerable strength in logically analysing and using inductive and deductive reasoning abilities. Her score for Perceptual Reasoning on the WISC - III, her overall profile on the WISC IV and her Perceptual Reasoning score on the SB5 indicated a strong visual spatial learning preference (Reports dated 24/04/03, 24/12/04 & 12/12/05).

Table 7.1 Results of IQ Assessments

WISC III			Sub tests	Sub test scaled scores
DOA				
24/4/03				
CA 6.5yrs				
Verbal IQ (VIQ)	Low average	85 – 16%ile	Information	8 – 25%ile
			Similarities	2 – 0.40%ile
			Arithmetic	10 – 50%ile
			Vocabulary	9 – 37%ile
			Comprehension	8 – 25%ile
			Digit span	9 – 37%ile
Performance IQ (PIQ)	Very superior	144 – 99.8%ile	Picture completion	14 – 91%ile
			Coding	16 – 98%ile
			Picture arrangement	17 – 99%ile
			Block design	19 -99.9%ile
			Object assembly	17 – 99%ile
			Symbol search (not included in IQ)	19 - 99.9%ile
Full Scale IQ (FSIQ)	High average	113 – 81%ile		
Index scores summary			Verbal comprehension	83 - 13%ile
			Perceptual organisation	141 - 99.7%ile
			Freedom from distractibility	98 - 45%ile
			Processing speed	140 - 99.6%ile
WISC IV				
DOA - 24/12/04				
CA 8.1yrs				
Verbal Comprehension index	Average range	91 - 27%ile	Similarities	8 - 25%ile
			Vocabulary	7 - 16%ile
			Comprehension	10 - 50%ile
			Information	12 - 75%ile

Perceptual Reasoning Index	Very superior range	131 - 98%ile	Word reasoning	9 - 37%ile
			Block design	15 - 95%ile
			Picture concepts	18 - 99.6%ile
			Matrix reasoning	12 - 75%ile
Working memory index	Average range	99 - 47%ile	Picture completion	14 - 91%ile
			Digit span	11 - 63%ile
			Letter numbering sequencing	9 - 37%ile
Processing speed index	Average range	100 – 50%ile	Arithmetic	12 - 75%ile
			Coding	8 - 25%ile
			Symbol search	12 - 75%ile
FSIQ	Average range	108 – 70%ile		
<hr/>				
Stanford-Binet Intelligence Scale: Fifth Edition				
DOA - 12/12/05				
CA 9.1yrs				
<hr/>				
DOMAINS				
Verbal IQ		117 – 87%ile		
Nonverbal IQ		140 – 99.6%ile		
FACTORS				
			Fluid Reasoning	129 – 97%ile
			Knowledge	126 – 96%ile
			Quantitative Reasoning	119 – 90%ile
			Visual-Spatial Processing	126 – 96%ile
			Working memory	129 – 97%ile
FSIQ	not calculated	23 point difference between VIQ & NVIQ		

Emma's weakness in the area of verbal reasoning abilities was highlighted in all assessments. She demonstrated difficulties in vocabulary, verbal fluency, auditory memory and verbal comprehension, as highlighted by her scores on the WISC - III Verbal IQ subtests. This pattern was also demonstrated on the WISC IV with low scores on the Vocabulary and Word Reasoning subtests. Her score on Quantitative Reasoning on the SB5, which measured her ability with numbers and solving numerical problems, also confirmed her weakness with verbal reasoning skills, as she was required to solve both verbal and nonverbal problems. Although she scored on the 90th percentile on Quantitative Reasoning, this was an area of weakness for Emma when compared with her other scores on the SB5 (Reports dated 24/04/03, 24/12/04 & 12/12/05).

Emma was assessed by the same psychologist on the WISC III and WISC IV, yet her results on the Coding and Symbol Search subtests in the two IQ tests are conflicting. In the WISC - III her score on the Symbol Search subtest was on the 99.9th percentile and Coding on the 98th percentile. It was noted in the report that these subtests measured her Visual Processing and Visual Motor Coordination skills and that Visual Processing and Visual Motor Coordination are therefore strengths for Emma (Report dated 22/04/03). Yet on the WISC IV assessment, conducted at 8 years and 1 month of age, Emma's scores on the Coding and Symbol Search subtests ranked her on the 25th and 75th percentile respectively. This second report noted that as a result of these subtest results, Emma had a weakness in her Visual Processing and Visual Motor Coordination skills and that as a result she would have had difficulty with handwriting, conveying thoughts to paper, and doing pen and paper tasks within a given time constraint. As these tests were age appropriate it was necessary to consider why the discrepancies occurred in these tests. The difference was unlikely to have occurred by chance alone and the possibility that something significant may have happened at the time of testing needed to be considered. What this could have been was not identified in either of the reports as the assessor noted that: "*Emma presented as a delightful, personable girl and responded positively towards our discussions and the assessment*" (Reports dated 22/04/03 & 24/12/04). Emma continued to demonstrate this inconsistency of results throughout the assessments she undertook. The possibility that the inconsistency of the results could have been attributed to disturbed sleep

patterns as a result of stress was raised by the researcher with Emma's mother who stated that Emma had never had sleep issues. She felt that Emma did not exhibit any signs of stress with respect to any of the assessments she undertook (Email dated 02/02/09).

Emma's FSIQ was calculated on both the WISC - III and WISC IV tests despite the large discrepancies between the VIQ, PIQ and the Index scores. It was noted on each of these reports that the individual scores needed to be considered rather than the full scale scores (Reports dated 22/04/03 & 24/12/04).

In addition to Emma's results on the SB5 the psychologist discussed the existence of Overexcitabilities (OE) (see Dabrowski, 1964) and the effects they may have had on her learning.

....there is increasing clinical evidence that it is the overexcitabilities, particularly in the emotional, intellectual and imaginal domains, that expand awareness to such a degree that the gifted child becomes unusually perceptive and sensitive, highly discriminating of the details of stimuli and more self-analytic and self-critical. (Report dated 12/12/05)

It was noted in the report that Emma exhibited behaviours that were affected by the following overexcitabilities:

- Psychomotor
- Sensual
- Intellectual
- Imaginational
- Emotional.

Emma's response to Psychomotor OE is that she loved to be active and enjoyed fast games and sports. She was sensitive to pain and loud noises and reacted strongly to certain smells and tastes, and was distracted by sensory stimuli which were responses to her Sensual OE. Intellectual OE was demonstrated by her love of strategic and computer games and her level of concentration when she was engaged

in a task in which she was intensely interested. She was also highly observant and was often too honest and critical of others who were not of the same intellectual capacity. Emma was interested in artistic creativity and loved design and colour. This aspect of her character related to her Imaginational OE. Like many gifted children Emma was very sensitive to injustice and hated to see others treated unfairly. She had high expectations of herself and was very self-critical. To others she may have seemed to overreact to criticism and this was as a result of her reaction to Emotional OE (Report dated 12/12/05).

Each of the IQ assessments resulted in different recommendations being made but with some common themes. Each of them suggested that she should have been provided with a special curriculum that took into account her giftedness as well as her learning disability. None of Emma's educational programs focused on her giftedness, only on her disability. The only 'gifted' activity she participated in at school was the Maths Olympiad, and due to the large amount of reading required she did not complete this program.

Emma demonstrated a strong visual spatial learning style and learned in a whole-to-part manner rather than a sequential, concrete manner. If she was taught in a step-by-step manner with drill and practice sessions, she was likely to disengage from learning and develop gaps in her knowledge (Reports dated 24/04/03, 24/12/04 & 12/12/05).

The reports on the WISC - III and IV recommended intervention programs such as the Lindamood-Bell Program which Emma undertook for a period of time but did not complete as, according to her mother, "*that was a really weird program, I didn't understand that one little bit*" (Interview 12/01/08). The report on the SB5 noted that it was important that Emma be valued and appreciated for her creativity, that her unusual ideas and questions be taken seriously, that she be given opportunities for self-initiated learning and that she be accepted and supported for not only her weaknesses but also her strengths (Report dated 12/12/05). It needs to be noted that by the time Emma undertook the SB5 she had been through a considerable number of assessments which may have affected her self esteem. This was supported by another educational specialist that Emma attended. "*Additional*

assessments will further emphasise Emma's deficits, compounding her being a 'case', and are unnecessary, possibly even damaging to her self esteem" (Report dated 15/07/04).

7.3.2 Learning Ability Evaluation

Prior to the WISC IV and SB5 assessments, Emma's mother sought alternative assessment of her cognitive and language function at the age of 7 years and 6 months, from an independent educational consultant. Table 7.2 outlines the tests conducted and the results. Appendix E describes the tests administered. Emma demonstrated inconsistencies in her results. Her scores ranged from the 37th percentile to the 91st percentile, demonstrating strengths in following oral directions and spelling, and weaknesses in receptive and expressive oral vocabulary, oral language comprehension, sound symbol association, passage decoding, reading recall, visual memory for letters and visual-spatial processing (Report dated 23/05/04).

The report suggested that some of her fluctuations in scores may have been as a result of the poor development of concept imagery which affected her ability to develop visual patterns for the understanding of oral and written language. Despite scoring on the 79th percentile for spelling Emma had difficulty using word attack and word recognition skills. This inconsistency was demonstrated in many of her performances on the various assessments.

Her Lindamood Auditory Conceptualization (LAC) Test score confirms her weakness in auditory conceptual processing which does not enable her to accurately judge the order, number and identity of sound within single syllable words in isolation when she has no time constraints. These skills are unreliable for Emma and underlie her inconsistent performance. (Report dated 22/05/08)

Emma scored on the 37th percentile for reproductions and had difficulty reproducing given shapes. This would also have been reflected in her ability to write fluently, hence making writing tasks difficult.

The recommendation was that: “*Emma receive intensive cognitive training – four hours daily – for a **minimum** of six weeks in order to develop and stabilize the following sensory-cognitive processes: concept imagery, visual motor processing, auditory conceptualization, symbol imagery and arithmetic*” (Report dated 22/05/08). At this stage Emma was attending Year two at school and yet the recommendation was that she needed four hours of training focusing on some aspects of her education. There was no suggestion that perhaps this training could have taken place instead of school, or perhaps for part of the school day.

Table 7.2 Results of Diagnostic Evaluation of Levels of Cognitive and Language Function

Test	CA 7 years & 6 months	Result
Peabody Picture Vocabulary Test 111A		Mental age 7 years 32%ile
Detroit Tests of Learning Aptitude		
Verbal Absurdities		Mental age 7.3 years
Visual Attention Span for Letters		Mental age 7.0 years
Detroit Tests of Learning Aptitude – 2		
Word Opposites		37%ile
Design Reproductions		37%ile
Oral Directions		91%ile
Woodcock Reading Mastery Test – Revised		
Word Attack		Grade 2 level 45%ile
Slosson Oral Reading Test - Revised		Grade 2.6 level 55%ile
Wide Range Achievement Test – Revised-3		
Reading		Grade 2 level 53%ile
Spelling		Grade 3 level 79%ile
Arithmetic		Grade 2 level 47%ile
Gray Oral Reading Test		Grade 2 level
Gray Oral Reading Test-3		
Rate		37%ile
Accuracy		50%ile
Passage		37%ile
Comprehension		50%ile
Lindamood Auditory Conceptualization Test		40/100
Multi-syllable Section: Category A		3/10
Informal Test of Writing		
Sound/symbol Associations		27/32
Nonsense spelling		1/3

Despite having the results from two separate IQ tests and a battery of Diagnostic Levels of Cognitive and Language Function tests, Emma was also assessed using the Woodcock-Johnson III Test of Cognitive Abilities and Woodcock-Johnson Test of Achievement just prior to being assessed on the SB5. These tests were conducted on 05/12/05 and 09/12/05 respectively and the SB5 was conducted on 12/12/05. Emma was aged 9 years and 1 month. The summary of her results on the Woodcock-Johnson tests are in Table 7.3 and the full results can be found in Appendix E.

The conclusion of these tests was that Emma's overall intellectual ability was in the low average range, her verbal ability (acquired knowledge and language) in the average range as well as her thinking ability (intentional cognitive processes) and her cognitive efficiency (automatic cognitive processing) in the low average range with no discrepancies found in her cognitive abilities (Report dated 9/12/05).

These results were in direct contrast to her IQ results. A school receiving a copy of these test results would not consider that Emma was gifted in any way nor that she had a learning disability.

Table 7.3 Results Summary of Woodcock-Johnson III tests of Cognitive Abilities and Test of Achievement

Cluster/Test	GE	Proficiency	RPI	PR	SS (68% Band)
CA 9 years & 1 month					
GIA	2.5	Limited to average	76/90	19	87 (83-90)
Verbal ability	3.7	Average	88/90	45	98 (93-103)
Thinking ability	2.7	Average	84/90	31	92 (89-96)
COG Efficiency	2.3	limited	46/90	12	82 (77-88)
Broad Reading	3.0	limited	64/90	25	90 (88-92)
Broad Math	3.3	Average	83/90	35	94 (92-97)
Math Calc Skills	2.8	Limited to average	75/90	20	87 (84-91)
Academic Skills	3.3	Limited to average	76/90	30	92 (90-95)
Academic Fluency	3.4	Average	83/90	35	94 (92-97)

Note: RPI – Relative Proficiency Index; PR – Picture Recognition; SS – Spatial Span Subtest; GIA – General Intellectual Ability; COG – Cognitive Ability.

A month after the above assessment, Emma attended another assessment by a special education teacher. It was not clear why this was undertaken as the tester did not note in the report why the parent requested the assessment. This was unlike other assessments where the report had initially stated that the assessment was conducted at the request of the parents as they wanted to find out Emma's abilities in various areas, her learning needs, her level of cognitive function and her possible potential (Various reports).

The areas of sequencing, counting and numbers, alphabet and handwriting, reading, spelling, story writing as well as drawing and auditory processing were assessed, as was her ability to throw and catch and balance when walking forwards and backwards. Emma was aged 7 years and 7 months at the time of the assessments and the main outcome was that she experienced greatest difficulty in the area of reading, writing and auditory processing. These difficulties were demonstrated in various ways when reading and writing (see Table 7.4 for results) (Report dated 26/06/04).

Table 7.4 Results of Reading Assessment

What she said	What was written
came	come
drop	droppy
at	sat
who	why
where	why
wished	wish
our	your
sounding	sending
What she wrote	Instead of
aw	our
libeyiy	library
rede	read
soohl	school
tock	took
et	it
feed	fed
geve	give
midos	medicine
aging	again
hopti	hospital

The recommendations from this report were that Emma undertake auditory testing, which was completed; auditory training at an initial cost of \$1250 with a follow-up program necessary; kinesiology; homeopathy; urine and saliva analysis; and, a learning program which would take five days to complete and required a follow-up program to be undertaken (Report dated 26/06/04). The auditory assessment was the only recommended intervention from this professional that was implemented by the parents.

7.3.3 A Neale Analysis of Reading (3rd Edition) – Form 1 – Assessment

Emma was assessed on four separate occasions using the Neale Analysis of Reading (3rd Edition) – Form 1 over a period of three years (see Table 7.5). Three of the assessments were carried out by the psychologist who conducted the WISC - III and WISC IV IQ tests, with the fourth being conducted at a speech and learning centre. Initial testing at age 6 years and 5 months indicated that Emma was able to identify all the letters of the alphabet, but that she had significant difficulty with individual letter sounds and with blending sounds. This indicated that when reading Emma would have had difficulty decoding words and comprehending what she was reading. In addition, she demonstrated difficulties discriminating words with different beginning and ending sounds, as well as performing poorly on tasks that required her to provide initial and final soundings of words. As a result of all these difficulties Emma had significant trouble with spelling, as indicated by assessment using the South Australian Spelling Test and noted in Table 7.6 (Reports dated 22/4/03, 23/2/04 & 24/12/04).

Table 7.5 Results of Neale Analysis of Reading (3rd Edition) – Form 1

Date of Assessment	Chronological Age	Test	Result
22/04/03	6.5 yrs	Accuracy	<6.0yrs
		Comprehension	<6.0 yrs
		Rate	<6.5 yrs
23/02/04	7.3yrs	Accuracy	7.3yrs
		Comprehension	6.5yrs
		Rate	6.11yrs
24/12/04	8.1yrs	Accuracy	7.6yrs
		Comprehension	7.10yrs
		Rate	8.4yrs
18/7/06	9.8yrs	Accuracy	8.3yrs
		Comprehension	9.0yrs
		Rate	9.7yrs

Table 7.6 Results of South Australian Spelling Test

Date of assessment	Chronological age	Spelling age
22/4/03	6.5yrs	<6.0yrs
23/02/04	7.3yrs	8.0yrs
24/12/04	8.1yrs	8.0yrs

Recommendations as a result of the reading and spelling assessments were that she required a program that incorporated visual and kinaesthetic elements, as Emma presented with auditory discrimination and short term auditory memory difficulties and these therapies would have utilised her strengths. The Lindamood-Bell Program and the Visualising and Verbalising program were recommended in order to develop her reading and comprehension. A private tutor was suggested to implement these programs (Reports dated 22/04/03, 23/02/04 & 24/12/04). Over a four year period Emma made substantial progress and her spelling became age appropriate. Her reading skills at this stage, despite some progress, were just below an age appropriate level. This progress had been achieved predominantly as a result of private tutoring.

The organisation that assessed Emma on the fourth occasion using the Neale Analysis of Reading (3rd Edition) – Form 1, at the same time conducted the following assessments over a three hour time frame:

1. Oral language skills - See Appendix E for results
 - a. Clinical Evaluation of Language Fundamentals – 4
2. Auditory processing and phonological awareness – see Appendix E for results
 - a. The Phonological Awareness Test (PAT)
 - b. Test of Auditory Perceptual Skills-Revised
 - c. Fisher’s Auditory Problem Checklist – parent completed questionnaire
3. Literacy Skills
 - a. Woodcock Reading Mastery Tests – See Appendix E for results
 - b. Neale Analysis of reading ability – Third Edition – See table 7.4 for results
 - c. Test of reading comprehension (TORCH) – See Appendix E for results
 - d. Test of written spelling – 4 – See Appendix E for Results

7.3.3.1 Oral Language Skills

Emma scored in the high average range for the Word Classes Receptive and Expressive Vocabulary subtests, in the average range for Concepts, Following Instructions, Understanding Spoken Paragraphs, Familiar Sequences and Rapid Automatic Naming subtests, and in the low average or below average range for Recalling Sentences, Formulated Sentences and Numbers Repetition both forward and backward. Despite scoring in the high average range for two of the subtests Emma still demonstrated substantial difficulty completing the tests, requesting several times that the instructions be repeated and at times, although able to state the function of an item, she had difficulty providing the appropriate name for the object.

Overall Emma’s results indicated significant language difficulties, particularly in the area of expressive language. This suggested that she did not have an accurate

picture of the required sounds in her auditory memory. This leads to word finding difficulties, word confusions, immature use of grammatical structures and poor sequencing of sounds and syllables. Emma demonstrated problems with auditory processing and was easily overwhelmed by auditory input, leading to auditory inattention (Report dated 18/07/06).

7.3.3.2 Auditory Processing and Phonological Awareness

In the Phonological Awareness Test, Emma scored below the standard score average of 100 on all subtests. She demonstrated inconsistency when segmenting words into their component syllables, and segmenting sentences into their component words. She was also inconsistent in the reverse, having difficulty blending words from their component sounds. Significant difficulty was shown by Emma when segmenting words into the component sounds, for example what are the sounds in the word 'plop'?, as well as substantial difficulty with the letter-sound association of letter pairs such as 'er', 'ir', 'ur', 'ea', 'oa' and 'ow' (Report dated 18/07/06).

In the Test of Auditory Perceptual Skills – Revised (TAPS – R), Emma scored below average in all the subtests. Her auditory processing was particularly poor, with her often hearing the words incorrectly and therefore when asked to repeat them, repeating the words incorrectly.

Additional auditory processing assessment was undertaken by two different practitioners using the SCAN – C test, a screening test of auditory processing. These tests were conducted at the ages of 7 years 5 months and again at 7 years 7 months with very different results, as indicated in Table 7.7. No intervention to remediate her poor auditory processing skills took place between the two assessments. The only explanation provided was that her hearing acuity and middle ear status had not been established prior to the initial assessment. Prior to the second assessment it was established that Emma's hearing acuity was normal but that she had some Eustacian Tube dysfunction (Report date 18/07/06).

Despite the discrepancies in the test results, and there seemed to be no real explanation as to why they were so different, the recommendations from both assessors were similar. They were that Emma should sit near the front of the room; be given short precise instructions; and mind maps, time lines and other pictorial representations be used to capitalise on her visual spatial skills. In addition, it was suggested that she take part in a research project that was being conducted at a university in order to develop her auditory processing skills. This project was undertaken over a 13 month period and involved extensive assessment and interventions (see Appendix E for tests and results). Emma's results throughout the various testing and interventions fluctuated substantially, ranging from below average to average on some of the assessments. The overall final outcome for her as a result of participation in this project was that no significant improvement was made in any of the areas assessed.

Table 7.7 Results of SCAN – C Test

CA 7yrs 5mths DOA 10/04/04	
Filtered words test	5%ile
Auditory figure ground test	16%ile
Competing words test	25%ile
CA 7yrs 7mths DOA 29/06/04	
Filtered words test	Score 10 – 50%ile
Auditory figure ground test	Score 11 – 63%ile
Competing words test	Score – 12 – 75%ile
Competing sentences	Score – 8 – 25%ile

7.3.3.3 Literacy Skills

Emma was tested on the Woodcock Reading Mastery Tests in Year four but her performance was at a Year three level on all the subtests. Her results on the Neale Analysis of Reading Ability – (3rd Edition) – Form 1, were only slightly lower than her chronological age but it needs to be remembered that this was the fourth time

she was assessed on this test, and in the meantime she had participated in some of the interventions.

The Test of Reading Comprehension (TORCH) was conducted towards the end of a lengthy session of testing; she made little effort and exhibited tiredness. Her percentile rank on this assessment was <1. Her spelling results put her at the level of a student a year younger than Emma. She spelt 'fountain' as 'foton', 'section' as 'shecshen' and 'signal' as 'segnol' (Report dated 18/07/06).

Emma's articulation showed immaturity with her substituting 'f' for 'th' and difficulty pronouncing multisyllabic words such as ambulance.

Due to Emma's extensive periods of fluctuating hearing her auditory pathways were not able to develop effectively. As a result she does not have a precise representation of the forty four sounds (phonemes) we use in English. This in turn leads to difficulties with articulation, sound discrimination, word retrieval, grammatical errors and problems with reading and spelling. (Report dated 18/07/06)

To help Emma improve her verbal skills several recommendations were made. These included the use of computer programs such as Fast ForWord, and the Cellfield Program for improving visual and auditory processing skills; being taught the Spalding Method of Literacy; using Nanci Bell's Visualising and Verbalising program; and using the CD Rom Earobics for further consolidation of her auditory skills. Additional suggestions were made for classroom management, which included the use of a multisensory instruction technique, clear, precise directions given in short phrases and ensuring that Emma is facing the speaker and paying attention when instructions are given. Emma did not complete all the interventions. Exact details of which interventions were commenced, the duration of the participation and completed programs were not available to the researcher (Report dated 18/07/06).

7.3.4 Time Order Processing (TOP Test)

This test measured speed and accuracy on visual, auditory and visual/auditory integrated processing. Emma's results were below average on each subtest (see Table 7.8 for results). Her visual processing system became tired and overwhelmed and the system "*shut down*" occasionally in order to rest. As a result there was a loss of concentration each time there was a shut down. Emma's central and auditory processing was affected more severely, which would have made it difficult for her to read, spell, listen and follow directions (Report dated 10/04/04).

Table 7.8 Results of Time Order Processing Test (Speed)

Test CA 7 years & 5 months	Expected times	Minute 1	Minute 2	Minute 3	Minute 4
Visual	30 – 80ms	89ms	114 ms	134 ms	Not calculated
Auditory	30 – 80ms	113ms	101 ms	151 ms	Not calculated
Integrated	30 – 80ms	136 ms	150 ms	146 ms	Not calculated

7.3.5 Vision

Emma was assessed by a developmental optometrist in 2003, 2005 and again in 2006 at ages 7 years and 6 months, 9 years and 5 months and 10 years and 6 months respectively. The initial assessment showed that visual acuity, eye tracking, colour vision, depth perception and sustaining focus were all within normal range. However, her visual information processing skills were below normal. Table 7.9 outlines her initial results on the Test of Visual Perceptual Skills (non-motor) by Gardner with an overall ranking on the 5th percentile (Report dated 05/03).

Table 7.9 Results of Test of Visual Perceptual Skills (non-motor) by Gardner

	Percentile Rank
Visual discrimination	42
Visual memory	87
Visual spatial relationships	81
Visual form consistency	2
Visual sequential memory	1
Visual figure grounds test	1
Visual closure	1
Overall ranking	5

The report concluded that her “*visual system is unable to take in information and process it efficiently resulting in extra effort to obtain satisfactory academic results*” (Report dated 05/03). The recommendation was that Emma undertake an individualised program of vision therapy (Report dated 05/03). This therapy was commenced but not completed as the mother did not see any improvement and felt it was useless (Interview 21/01/08).

Assessments were also undertaken in 2005 and 2006 by an additional developmental optometrist. No intervention was undertaken between the two assessments. Results from both assessments are outlined in Table 7.10 (See Appendix E for additional information). The 2005 assessment diagnosed reduced visual processing and recommended the Temporal Visual Processing Program (TVPP) be undertaken; the 2006 report diagnosed reduced reading fluency and recommended a program developed by the centre at which she was assessed. Neither program was undertaken. The mother did not provide a reason as to why she did not follow through with the recommendations. Both reports noted that:

Decreased vision, visual skills, visual information processing and reading fluency contribute to reading and learning concerns, reduced academic performance, attention problems and reduced concentration spans. (Reports dated 17/04/05 & 26/05/06)

Table 7.10 Results of Vision Assessment

2005	Score		
Results			
Vision	Long sighted		
Eye tracking	Excellent		
Esophoria (pass >10)	16.53		
Convergence (Pass >20)	31.22		
Eye focusing	excellent		
	Percentile	Pass Percentile	
Directionality	NA	50	
	63	50	
	74	50	
	26	50	
2006	Result	Grade Norm	
Fixations/100 words	654	< 139	
Regressions/100words	306	< 31	
Reading rate (wpm)	98	≥ 158	
Comprehension	90	> 80	

7.4 PHYSICAL DEVELOPMENT ASSESSMENTS

An assessment of her gross and fine motor skills in April 2004 at the age of 7 years and 4 months found that Emma's gross motor skills were fairly well developed except for skipping and balancing. Muscle tone and strength were good. Emma experienced difficulty balancing on her right foot with eyes opened and closed. Balance on the left foot with eyes opened was better but she still experienced difficulty with eyes closed. Balance is closely linked to the auditory system and other assessments had established she had an auditory processing problem.

During a handwriting and written expression assessment Emma demonstrated an incorrect grip on her pencil. Her fingers were placed high on the pencil shaft and she exerted substantial pressure on the paper when writing. This highlighted the

fact that Emma's fine motor skills in the area of handwriting were not fully developed and she was using force to compensate for control.

At the same time Emma was assessed for integration. In the lazy eight test – repeatedly drawing an 8 lying on its side – she had difficulty, as she did when drawing 3 to 4 loops counter-clockwise across a page. Some success was achieved with considerable effort and concentration, but loops near the middle of the page were more poorly formed than those on the outer edges which indicated that Emma was having difficulty crossing the midline, and that integration was delayed. Integration is essential for learning. No specific recommendations were suggested to help Emma improve her fine motor skills but therapy was suggested to improve her auditory skills. It was hoped that by participating in the research project she would have shown improvement in her auditory skills (Report dated 10/04/04).

7.5 DISCUSSION

Emma is an innately intelligent child whose giftedness was invisible in the classroom setting due, in part, to her learning disability. She was an abstract thinker who was likely to work in a holistic and creative way in the classroom, rather than in a logical sequential manner. In addition she had been exposed to numerous assessments and interventions, resulting in low self-esteem and emotional insecurity. Emma was also assessed for her behaviour and emotional state. These two aspects were not assessed earlier but rather at a later stage when her mother consulted with yet another independent psychologist (Report dated 25/08/04).

The behaviour and emotional testing was suggested by yet another psychologist whom Emma's parents consulted, and who initially suggested that Emma had undergone enough testing, and that the information that had already been collected should be utilised. The tests this psychologist used were a BarOn EQ-I:YV assessment, which measures total emotional intelligence, interpersonal and intrapersonal intelligences, adaptability, stress management and general mood, as well as the Achenbach System of Empirically Based Assessment (ASEBA), which comprised an integrated set of forms for assessing competencies, adaptive function

and problems. The ASEBA form was completed by her parents and two of her teachers (Report dated 25/08/04).

The results from three of the four people, who completed the ASEBA, placed Emma between the borderline and clinical range for Oppositional Defiance Disorder (ODD) and also placed her in the borderline range for affective/emotional problems. The BarOn EQ-I:YV assessment returned an Inconsistency Index that indicated random sampling by Emma so another one was administered at a later date with an even higher Inconsistency Index Rating. Despite this the examiner suggested that there were some consistencies (see Table 7.11 for results) (Report dated 25/08/04).

Table 7.11 Results of BarOn EQ-I:YV Assessment

Test	Result
Total Emotional Intelligence	Average score 90-109 Emma's score 50
Adaptability Scale	Average score approximately 30 Emma's score 21 below average
General mood	Average score 48 Emma's score – consistently below lowest score of 34
Seligman Child Depression Assessment	Emma severely depressed

Several strategies were recommended as a result of these assessments. The main suggestion was that Emma's extra-curricular interventions be scaled back to just the one, to help her reading, and that the home emphasis be on Emma's capabilities rather than her deficits. Despite this, the assessor suggested that Emma attend weekly sessions in order to address the behavioural problems that were highlighted by the ASEBA assessment (Report dated 25/08/04).

Throughout the extensive testing, Emma's school life had not been consistent. She had changed schools due to financial concerns, and, additionally, the lack of an appropriate school responsive to her educational needs. It was therefore also

suggested in this report that she needed some consistency and predictability in her life. An important aspect of Emma's emotional development was to develop positive relationships with both her parents and it was suggested that she spend quality time individually with each parent (Report dated 25/08/04).

At various times the assessors commented that Emma rushed her answers or didn't think about them, needed constant encouragement and sometimes just wasn't interested in trying. This behaviour was not surprising considering the amount of testing and interventions to which she had been subjected. The message she was receiving was a negative one, that she had no positives worth concentrating on and highlighting.

Emma was very aware that she had problems at school and was very keen to work on improving them. *"There's a special guy at our school that helps everybody with reading and writing and stuff like that and I'd probably say, 'Can you get me more lessons with him?' "* (Interview 12/01/08). She knew that she was good at science and art, and enjoyed great satisfaction from achieving in those subjects. *"When I did the weather poster I was really excited about that. It was extra work but I was OK about that"* (Interview 12/01/08). She had developed a strategy for helping her when reading as she knew this was her greatest weakness. *"Now I put a bookmark under each sentence and when I finish I put it down again. So I see where I'm up to instead of going all the way"* (Interview 12/01/08).

Bullying has been a part of her school life with little or no support from the various schools. She had been physically as well as verbally abused by other children which has added to her low self-esteem and eroded her self-confidence. *"Well that puts me down, like when I'm reading because I usually get words muddled up - I feel bad about myself"* (Interview 12/01/08). Despite the extensive assessments and interventions, Emma was aware that without them she would probably be even further behind at school, but maybe she needed to be given the opportunity to have focus on a particular area and achieve in that area before being subjected to further interventions. Currently she is attending a speech therapist and a special education tutor for her reading skills. Emma played tennis and has had music lessons as extra-curricular activities.

Emma continued her inconsistencies by providing the researcher with different responses and opinions to those she had expressed to her mother. She told the researcher that what she liked about school was the new stuff every year and meeting new friends - but she had few friends from school - and she had no tolerance for teachers who seemed to have little ability for teaching. With respect to the likelihood of a specific teacher the following year, Emma had told her mother that if she got a certain teacher she was going to walk out (Parent interview 12/01/08).

7.6 PARENT RESPONSE

Emma's parents began the journey of continual assessment and interventions as a result of the Year one teacher informing them that Emma could not read. Her parents were aware that she had issues with reading, but did not realise that she was gifted as well. Despite the assessments, the original school would not entertain the fact that Emma was gifted, particularly as she would not conform in the classroom. The Year one students were expected to paste their homework sheet on one page in their book and do their spelling on the opposite page. Emma would swap the pages around each week and as a result incurred the teacher's displeasure (Mother interview 12/01/08). On another occasion, during a meeting of the parents, the principal, the gifted coordinator and the classroom teacher to discuss initial assessments, the implication was made that the psychologist had touched up the report as the referral had come from another school. This classroom teacher also confirmed in the meeting that Emma was not conforming as she did not complete maths calculations the way the teacher had demonstrated. She had completed them correctly but using a different method.

In order for Emma to undertake the Lindamood-Bell Program her parents had to take her out of the private school and enrol her in a government school because they could not afford to pay private school fees as well as the cost of the intervention. This was the first of a number of changes of school for Emma. In this school she was put into a class that was job-shared by five teachers. Sometimes she could have two different teachers within one day, and consistently had a different

teacher every day. Emma attempted to avoid going to this school by hoping that each morning when she woke up she would have a fever. *“Taking her temperature every day, taking it every day. Hoping she’d get that magic number 38 every single day. She would get up and go and get the thermometer and ask, ‘Is it 38 yet?’ ”* (Parent interview 12/01/08). Emma did not complete the Lindamood-Bell program as her mother did not understand it and felt that it was not making any significant difference to improving her skills.

Many of the professionals that were consulted by Emma’s parents were recommended as a result of discussions with other parents in a parent support group specifically for children who are gifted with learning disabilities. Some of the interventions were undertaken but not completed, as her parents felt they were not making a difference, e.g. the vision program, or that they did not understand them. Others were not commenced because of time and money constraints. *“They wanted you to go every month up there and it was a weekday during work time so I couldn’t go and you had to be tested every month at \$80 or \$100 each time”* (Parent Interview 12/01/08). One sound therapy program was completed at a cost of about \$2000. Emma had attended speech pathology in order to improve her reading and comprehension. This had not been undertaken consistently with the same provider as the parents seemed to have searched for someone who could ‘cure’ Emma of her disability.

With Emma’s and her parents’ continued dissatisfaction with the existing school they looked for yet another school that demonstrated the same educational philosophy as her parents had (Father Interview 12/01/08). Emma was moved to a new school and for a year had a teacher who supported her by providing extension work and an understanding that Emma was very intuitive in her learning. The principal of this school, though, had little understanding of the need to teach children using their strengths. *“The principal at a meeting stated that there are children in this school who are visual spatial but we don’t want them to learn that way, we want them to learn the auditory way”* (Parent Interview 12/01/08).

Emma’s parents have supported her by trying to understand what her issues are and have participated in many interventions to help her. Her mother had joined a

support group of similar parents and had read information and books that had been recommended by some of the professionals who had been consulted. Emma had participated in fun activities with like-minded children conducted by the support group.

7.7 FAMILY EFFECTS

Emma being gifted and having a learning disability has had a profound effect on the family. Because she is an only child the focus had been completely on her and there had been no distraction to take away from her lack of school achievement. The main aim had been to find out what was ‘*wrong*’ with Emma and to ‘*cure*’ her of her problem. This has involved considerable expense, both financial and in time, as one assessment after another is sought, and one intervention after another is undertaken, either partially or fully.

Many of the assessments have delivered contradictory results, leaving the parents sometimes confused and wondering if much of the testing and reporting can be described as just “*hocus pocus*” (Father interview 12/01/08). This has left them unsure of what to believe or disbelieve. Some of the professionals reinforced difficulties for the parents by suggesting that programs with follow-ups were required after initial testing, and that more testing was required after the programs were completed. This can put considerable financial and time strain on the parents who only want to do what is best for their child. All assessments and interventions focused on Emma’s disability and not her giftedness. Throughout the whole process so far this had been the focus.

Emma had felt the strain of expectations and the continual assessment and interventions as has her father. “*It’s hard on me too, getting dragged to all these things and all I’m doing is getting her tested but nobody’s coming up with any answers*” (Father Interview 12/01/08). He understands Emma very well as he can see himself in her.

I know what she is going through. I don’t have the solution for me yet, because I can see a lot of myself in her so I can see her frustrations and

that's why I don't jump up and down too much because I know in the long run that you can't battle against your innate self. I know what she is going through. (Father Interview 12/01/08)

Her father seemed to think that Emma was lazy and just didn't want to make the effort. Nevertheless, he noted that sometimes he also tried to stay focused but sooner or later the effort became too much and he reverted back to the way he was (Father Interview 12/01/08). Emma's father seemed to be sending mixed messages to Emma, but was also demonstrating intuition with respect to Emma's behaviour. He gave the researcher the impression that he was proud of Emma and was supportive of all that was being done but was also feeling that much of it could be a waste of time.

Well you know I said in fact that there are too many of these – she seems to be tested to within an inch of her life and she does really well with it. I think things have happened because there's a lot of testing. (Interview 12/01/08)

This family was experiencing and demonstrating mixed reactions to the issues surrounding Emma and her education and abilities. There was possibly some conflict between the parents with respect to Emma and she may have been receiving different messages from each of her parents, which could have added to her confusion, and her efforts to understand herself and how her giftedness can help her cope with her learning disability. This awkwardness could continue to affect not only her intellectual development but also her social and emotional development.

7.8 CONCLUSION

Emma has changed schools yet again due to the fact that her parents have moved interstate as a result of issues with extended family. Her mother is still seeking answers to Emma's disability and possibly still looking for a 'cure'. Issues have also arisen within the family structure as well. It seems that for Emma life is still very unsettled.

CHAPTER 8

CASE STUDY 4

DAVID

8.1 INTRODUCTION

This chapter will discuss the process of identification of David as gifted with learning disabilities, the interventions undertaken and the effects on the family and David of being identified as gifted with a learning disability.

8.2 BACKGROUND INFORMATION

David lives at home with both of his parents. His mother is a teacher and his father is a computer software engineer; he also has a younger sister. He attends a school in the Sydney Metropolitan area in Australia. At the time of the research David was in high school.

David was identified as being gifted with learning disabilities after starting school. Before going to school his parents were aware that he was an extraordinary child with insights and understandings well beyond his years. At the age of two David, prior to Christmas, told his mother that *“Santa probably won’t come to me as I have everything I need. He didn’t open his Christmas presents”* (Parent interview 21/01/08).

IQ testing was undertaken in Kindergarten *“because he wasn’t doing what the other children were doing”* (Parent interview 21/01/08). The need to conduct some form of testing was mutually agreed on by the parents and the school.

8.3 IDENTIFICATION

David was reticent to talk to the researcher. This was apparently not unusual for David who is an introvert and it usually took more than one meeting before he felt

relaxed in a situation that he perceived as being some sort of assessment. This was demonstrated when undergoing assessment by an Occupational Therapist who *“noted that he was more relaxed in the second session”* (Occupational Therapist report dated 08/09/00).

In the years prior to going to school it was clear to David’s parents that he was an unusual child. He was putting sentences together at 12 months, reciting nursery rhymes at 14 months and at 18 months made the observation to his mother that *“there’s a shadow on my hand”*. She asked him *“how do you think it got there”* and his response was *“the sun came out”* (Parent interview 21/01/08). When taken to the playground in the local park, David would sit and observe for a while, before proceeding to undertake the activity he had been observing. There was no trial and error, and there was no repetition because, *“when you can do something why would you do it over and over again”* (Parent interview 21/01/08). David also demonstrated empathy with other children by helping when a child was hurt in the local playground. It was David who found the mother and took her to the injured child. This behaviour was again demonstrated at preschool where he befriended an autistic child.

When observing David at preschool it was obvious to his mother that his verbal skills were well ahead of the other children. If he heard a new word he would ask its meaning and then incorporate it into his own language. He didn’t object to going to preschool but he did not like doing the puzzles or craft. Although this could have been an indicator that David had a learning disability his mother wasn’t worried as she felt they did enough creative activities at home with David. Another indicator that, despite being gifted something did not add up, was that when the other children started to write their names at preschool David wouldn’t. If he had to write his name he would take off his hat, as it had his name on it, and he would copy it. David was obviously aware even at this early age, that he had difficulty completing some activities. When asked by the preschool teacher what he had written during writing time he would say *“Well, I’ve written it in Chinese. Can’t you read Chinese?”* (Parent interview 21/01/08). On another occasion he told the teacher he had written in *“African underwater writing”* (Parent interview 21/01/08). This was a very clever solution for someone who had handwriting difficulties and it is

astounding considering that at this stage, David was not even at school. This was a clear demonstration of a child using his giftedness to hide his disability.

Despite these indications of a learning disability his mother was not concerned, as she thought he would do it when he was ready. She also felt he was a perfectionist and that he wasn't going to attempt a new activity until he knew he would get it right first time. The preschool teachers were not concerned either as they felt his problems were a developmental issue and he would do it when he was ready. It was not until half way through kindergarten when the other children began to read and write and David didn't, that the school and the parents felt it was time to investigate why. The school counsellor was approached and David was assessed using the WPPSI -R.

8.3.1 IQ Assessment

A WPPSI – R was initially conducted by the school counsellor at age 5 years and 9 months with a follow up WISC - III administered two years later. The results of the WPPSI – R indicated that David was in the very superior range for his Verbal IQ (VIQ) and in the high average for his Performance IQ (PIQ). A discrepancy of 32 points between his VIQ and PIQ meant that a Full Scale IQ (FSIQ) could not be calculated. Results of the WISC - III elicited similar results with a discrepancy of 18 points between the VIQ and PIQ. Despite this discrepancy a FSIQ of 121 was calculated. These results indicated that David was a gifted student and as such he should have been provided with an appropriate educational program by the school. The IQ assessments indicated significant learning disabilities which needed to be addressed (see Table 8.1 for results).

Table 8.1 Results of IQ Assessment

WPPSI – R			Sub tests	Sub test scaled scores
DOA 20/07/00				
CA 5yrs 9mths				
Verbal IQ (VIQ)	Very superior range	138	Information	14
			Similarities	15
			Arithmetic	12
			Vocabulary	14
			Comprehension	16
Performance IQ (PIQ)	High average	106	Picture completion	15
			Block Design	14
			Object assembly	10
			Geometric design	7
Full Scale IQ (FSIQ)	Not calculated			
WISC - III				
DOA 12/12/02				
CA 8yrs 2mths				
Verbal IQ (VIQ)	Superior	131 – 95%ile	Information	15
			Similarities	17
			Arithmetic	9
			Vocabulary	17
			Comprehension	13
Performance IQ (PIQ)	High average	112 – 79%ile	Digit span	14
			Picture completion	12
			Coding	9
			Picture arrangement	10
			Block design	15
Full Scale IQ (FSIQ)	Superior	121 – 92%ile	Object assembly	13
			Symbol search	13
Index summary scores			Verbal comprehension	131 – 98%ile
			Perceptual organisation	116 – 86%ile
			Freedom from distractibility	109 – 73%ile
			Processing speed	106 – 66%ile

In the school counsellor's report on the WPPSI – R, the large discrepancy of 32 points between the VIQ and PIQ was noted with the additional observation that “*it is very possible that as David matures this gap will lessen considerably and the results will be more equable*” (Report dated 20/07/00). The possibility that he had fine motor difficulties was demonstrated by the low score on the Geometric Design subtest. One reason suggested for this low score was that it could be due to a developmental factor. Brain development related to fine motor skills was slower to develop than his other more advanced areas. Alternatively, he could be experiencing an intrinsic weakness.

When making recommendations, the counsellor considered David's giftedness as well as the possibility that he could have a disability. To cater for his giftedness it was suggested that he “*be extended and encouraged as much as possible in language related areas to maximise his potential and prevent him from becoming bored or 'turned off' school*” and for his disability, “*he be encouraged to write, draw, cut and paste etc to address this area of weakness*” (Report dated 20/07/00). It was also suggested that he have an occupational therapy assessment to gauge whether intervention would be in David's best interest.

Results from the WISC - III which was administered 2 years and 5 months after the WPPSI - R demonstrated a reduced gap between the VIQ and PIQ as compared to the gap demonstrated on the WPPSI – R. A FSIQ of 121 was calculated. David performed better on the Verbal tasks than on the Non-Verbal Reasoning tasks. A strength for David was his ability to verbalise meaningful concepts as well as retrieve information from long term memory. This was demonstrated by his score on the Vocabulary subtest. David's score on the Block Design subtest, which assessed ability to analyse part-whole relationship when information is presented spatially, identified his learning style as visual spatial. Problems with number abilities were demonstrated by the low score on the Arithmetic subtest and a score lower than that gained on the Digit Span subtest. While both of these subtests require attention, concentration and mental control, the Arithmetic subtest also measured specific abilities in numerical operations and mathematical reasoning (Report dated 16/12/02).

David's processing speed placed him at the 66th percentile and therefore within the average range, while his nonverbal abilities placed him in the high average range. These results, when considered with the results for his verbal abilities, indicated that David had areas of disability that were affecting his learning. The report from the WISC - III, whilst it noted that David demonstrated areas of weakness, did not make recommendations for either his parents or the school, of ways to appropriately provide for his giftedness as well as his learning disabilities. There was no discussion of the effect his learning disabilities would have on his ability to learn and achieve in school.

8.3.2 A Neale Analysis of Reading (3rd Edition) – Form 1 – Assessment

A Neale Analysis of Reading (3rd Edition) – Form 1 (see Table 8.2 for results) was conducted by the school counsellor. Daniel was reading at above age level and the comment was made to his mother that his comprehension speed and accuracy was very high. Daniel's comment was that it was easy for him to make a picture of the story in his mind which made it easy for him to remember what the story was about. Reading was not a problem for him.

Table 8.2 Results of Neale Analysis of Reading – (3rd Edition) – Form 1 – Assessment

29/4/04 CA 10.8yrs	
Test	
Accuracy	12.4yrs
Comprehension	>13.1yrs
Rate (58wpm)	Not available

8.3.2 Visual Assessment

David was assessed by a developmental optometrist who noted that he “*had a reduced ability to sustain convergence and restricted fusional range*” (Report dated 30/06/06). He was prescribed support lenses with yoked prism for schoolwork. In

2004 a Visual Information Processing assessment was conducted with the areas of visual memory, visualisation and visual span being of concern. As a result of these concerns a Vision Therapy Program, which included computerised home therapy, was recommended. David completed a course of vision therapy and was reassessed. The yoked prism was removed from his prescription but he was to continue wearing his lenses for schoolwork. A further course of Vision Therapy was recommended but his parents chose not to undertake another course as they considered that the gains would have been minimal.

8.3.3 Auditory Assessment

David's auditory skills were assessed using the Threshold Order Processing (TOP) Test and the SCAN test. The SCAN test comprised three subtests – Filtered Word Test, Auditory Figure Ground Test and Competing Word Test. His results are summarised in Table 8.3. For the TOP test the normal speed of processing of visual and auditory information is 40 milliseconds (ms). David's results were substantially higher than this speed, indicating that he had an auditory processing disability. Poor results are indicative of visual, auditory, comprehension and memory problems. As a result the areas of reading, writing, spelling and comprehension are affected and possibly behaviour, socialisation skills and concentration (Report dated 08/06/06).

The average scaled score for the SCAN tests is 10. David's scores on all three tests were below 10, that is, below average. Low results on these subtests meant that David may have had poor receptive language skills, which could have affected his spelling and comprehension. The Filtered Words Test distorts clear speech and sends sounds through to the ear at an angle. David's score on this test was only 7 which is below average. In addition, the result of the Auditory Figure Ground Test indicated he would have had problems picking up what was being said if there was background noise or movement. This could have affected his ability to function both socially and academically. David would also have had problems processing more than one piece of information as demonstrated by the result of the Competing Word Test in which two sounds are presented in both ears simultaneously. This could have affected his speech development, receptive language and his ability to comprehend and follow instructions (Report dated 08/06/06). Assessment using the

South Australian Spelling Test confirmed that David was struggling with spelling. When assessed, his chronological age was 11.8 years and his results indicated that he had the spelling age of between 9.0 and 9.2 years (see Appendix F for spelling assessment).

Table 8.3 Results of Auditory Assessment

Threshold Order Processing (TOP)	
Test	
Visual processing	93 ms
Auditory processing	140 ms
Visual/auditory	68 ms
Scan Test	
Filtered word test	7
Auditory figure ground test	9
Competing word test	9

Note: Normal speed of processing for visual & auditory information for a child over 6 years of age is between 40 – 60 ms. Average scaled scores for the SCAN tests is 10 or 50th percentile

In order to compensate for his auditory difficulties David would have needed to sit at the front of the classroom facing the teacher. He would have needed to be given a small number of instructions one at a time in order to allow him to process and follow them. SAMONAS sound therapy was recommended for the duration of 12 to 18 months. David is currently completing sound therapy.

8.4 PHYSICAL DEVELOPMENT ASSESSMENTS

In order to assess David's level in various aspects of his physical development, including fine and gross motor skills and handwriting abilities, an assessment was conducted by an Occupational Therapist using the following tests:

- Southern California Sensory Integration Tests;
- Clinical Observations of Neuromuscular Functioning;
- Beery Developmental Test of Visual Motor Integration; and,
- Goodenough Draw-a-Man Test.

The results demonstrated that an area of strength for David was his ability to visually and cognitively plan an activity so that when he actually did it, he was less likely to fail. He was able to hop on his left and right leg and had good jumping skills in all directions. All other results were either in the average or below average range. He had retained many of the primitive reflexes, which hindered his mental development and his ability to automatically perform tasks such as ball throwing and bouncing. These results meant that David would have experienced a level of difficulty in many areas of his learning.

David was able to identify objects through touch but scored below average when required to copy a diagram that was traced on the back of his hand. Touch discrimination is important in the development of fine motor skills, but David displayed irritation at touch. David's awareness of where his body was in space was in the average range and it was noted that he liked to watch before attempting any activity. This was an indication that his proprioceptive system was slightly under-developed which meant he would have been hesitant to perform new movements with his body. This was probably further exacerbated by his inefficient processing of vestibular input. Vestibular perception is the response of the inner ear to motion or change of direction of the head.

David presented with low to normal muscle tone with weak shoulder and neck stability and fingers which were very flexible. He was still showing primitive postural reflexes which would have influenced his ability to dissociate movements and cross the midline. Right hand and foot dominance was established with bilateral coordination scores within normal range. David did not get any enjoyment from bilateral activities such as riding his bike.

He was able to cross the midline but avoided doing so. The important skill of space visualisation is required for reading, maths and general spatial organisation of work and actions. David scored below average for space visualisation. His score on the design copying test was below average which meant David would find it difficult to copy and write. In the Beery Developmental Test of Visual Motor Integration, David was able to copy the required shapes, but in the simple eye function test he

demonstrated some difficulty with eye convergence. This would influence his visual perception and motor spatial functioning. It should be noted that the results of many of these tests could be affected by stress. Some of the tests were conducted over two days and the assessor noted that on the second day some of the primitive postural reflexes were not as prominent as they were on the first day (Report dated 08/06/08). These results are outlined in Table 8.4.

Table 8.4 Results of Physical Development Assessments

Function	Perception/ Ability	Result
Sensory Integrative Functions	Somatosensory perception – the system that detects touch and body position. Two systems related to touch (tactile discrimination and touch modulation) were assessed, as well as proprioception.	<p>Tactile discrimination - the ability to identify an object through touch & to tell where you have been touched on your body. He was able to identify objects through touch & could tell which finger had been touched without looking. Scored below average with graphesthesia, which requires copying a drawing that had been done on the back of the hand without watching. This task has a spatial element which could influence his ability to accurately copy the design but he also found touch irritating & struggled to concentrate as a result. Touch discrimination is important as a foundation skill for fine motor coordination</p> <p>Touch modulation – this system is protective in nature & can manifest itself in over sensitivity or excessive craving for touch. He was presenting with some sign of sensitivity but did not present with enough signs to indicate tactile defensiveness</p> <p>Proprioception – is the internal sense of joint/muscle position & movement & allows us to be aware of where our bodies are in space. Scored in the average range with both left & right hands on test of kinaesthesia which assesses for proprioceptive functioning. It was noted that he relied a lot on vision to guide his movements & needed a few trials before he was able to do the movement with confidence. He liked to watch before he attempted activities and it was possible that he was visually & cognitively planning so that when he had a go he didn't fail. Proprioceptive system slightly under active and even though he received accurate feedback it took a while for him to process it. This would cause him to be cautious with new movement activities.</p>
	Vestibular perception – receptors in the inner ear respond to motion or change in head position. It influences muscle tone, ocular control, bilateral coordination & balance.	On Post Rotatory Nystagmus Test – he presented with a short weak nystagmus indicating that he was not processing vestibular input efficiently & this would have influenced his muscle tone, balance and equilibrium, ocular control and bilateral coordination. (Nystagmus is a natural movement of the eyes that occurs as a result of vestibular stimulation e.g. spinning)

Function	Perception/ Ability	Result
Motor Functions	Postural Control	<p>Gross motor – presented with low to normal muscle tone. Able to assume extension & flexion positions against gravity but lacked endurance to maintain them. Had weak shoulder & neck stability, fingers were very flexible. Both of these are important as a base for fine motor coordination. Still showed signs of early postural reflexes which influenced the ability to cross the midline & dissociate movements. Stress influences these movements considerably. They were strongly present in the first session but only mild in the second. His standing & walking balance was in the average range but he relied heavily on vision more than the vestibular system. It was not automatic. Able to hop on left & right leg, had good jumping skills in all directions, caught a large ball better than a small one, catching skills lack relaxed automatic adjustments i.e. he held his body & hands very stiffly & relied on the ball being thrown directly to him. Throwing not always accurate or controlled, unable to bounce a ball.</p> <p>Fine motor control – On Motor Accuracy Test scored in the average range with right and left hands indicating that he was able to draw accurately within a given time limit. Used four point pencil grip, held hand clear of the page which affected the flow and control of his pencil. Able to cut independently along a straight, curved and zigzag line but struggled to stay on the line. Left hand helped turn the page. Struggled to dissociate his fingers and had floppy alternating movements of his forearm. A stable forearm and controlled finger dissociation are both important for fine motor manipulation.</p> <p>Bilateral Integration – Had established dominance with his right hand & foot, able to identify left and right on himself & others. Bilateral coordination scores fell in normal range for his age on a test requiring him to copy rhythmic movement patterns with both hands. He got little enjoyment from bilateral activities such as riding his bicycle. Able to cross the midline but avoided doing so consistently. This was being influenced by the presence of the early primitive reflexes.</p> <p>Motor Planning – (Praxis) On a test of motor planning scored in the average range for his age. Imitated postures by using a combination of vision, trial & error & cognitive skills rather than automatically moving his body. Possible that because of slightly under active proprioceptive & vestibular systems he did not have a good internal awareness of how his body moved therefore found it difficult to plan movements automatically. This would have influenced his ability to learn new and unfamiliar movements.</p>

Function	Perception/ Ability	Result
Visual Perception Skills		<p>Scored below average in space visualization which meant that he had difficulty manipulating objects spatially in his head. This is an important skill for reading, maths & general spatial organisation of work & actions. Scored below average on the design copying test which is a visual motor integration task – child had to look at a dot to dot design, process the information & work out a way to draw it so that it is identical. It is an important skill for copying & writing. He scored in the average range on position in space test where pictures are in front of you & only have to be matched. Scored in the average range in the figure ground test indicating that he was able to find detail in a busy picture.</p> <p>Beery Developmental Test of Visual Motor Integration – scored within normal range for his age. This test required him to copy geometric shapes such as squares & triangles. His confidence & ability to cope with stress influenced his performances. Drawing of a man was slightly immature for his age. In the simple eye function test he had some difficulty tracking a moving target. His eyes lost the target in the midline & they did not converge well together, These ocular difficulties could have influenced his visual perceptual & motor spatial functioning.</p>
Wide Range Assessment of Visual Motor Ability		<p>In visual motor, visual spatial & fine motor his skills were slightly above average for his age. Copywriting he demonstrated appropriate right hand tripod grasp of the pencil & positioned the paper in the middle. Sample demonstrated difficulties with size and spacing and incorrect letter heights. Assessment indicated appropriate visual motor skills, handwriting was immature for his age but assessor felt difficulties were developmental in nature and as a result of reduced interest and practice (Area Health Occupational Therapy Assessment, 08/06/08).</p>

The result of the assessments undertaken indicated that David would have been experiencing a range of difficulties in his learning. His weak muscle tone would have affected his ability to sit or hold one position for a period of time and, in turn, his ability to concentrate in the classroom. Joint instability in his shoulders, neck and fingers would have affected his fine motor control which in turn would have meant that he would have had difficulty with handwriting skills. This was demonstrated by his awkward pencil grip and his control and flow of writing. David used a four point pencil grip when a tripod grip is the most efficient and he wrote with his hand well clear of the page, affecting the flow and control of his pencil.

His forearm had alternating floppy movements and a stable forearm is required for fine motor manipulation.

A substantial amount of the work David was required to do in the classroom meant copying information from one medium to another. David scored below average on the design copying test which meant he would have needed to sustain a high level of concentration in order to successfully copy information. This would be both physically and mentally exhausting for him.

Recommendations from the Occupational Therapist to assist with overcoming the deficits David was experiencing were:

- *A home based integration exercise program and primitive reflex program. Recommended duration of 6-9 months;*
- *Occupational therapy with a sensory integration approach initially focusing on proprioceptive-vestibular processing in order to lay strong foundation for skills such as writing, drawing, balls skills and visual perceptual functioning;*
- *SAMONAS Sound therapy with a recommended duration of 12-18 months;*
- *Prescribed lenses with yoked prism for school work. (Report dated 08/06/08)*

8.5 DISCUSSION

David was initially identified as having a learning disability when he was unable to read or write in kindergarten. An assessment using the WPPSI – R identified that he was also gifted. The counsellor did acknowledge that David was not only gifted, but that he could also have had a learning disability. A disability with respect to fine motor control was the only disability considered and a suggestion was made that assessment by an occupational therapist might be a good idea. The Area Health occupational therapist came to the school and assessed David, but as he performed at an average level and not below average, it was considered that he did not have any disabilities and would not be considered for a special intervention program.

This decision stood despite the large demonstrated discrepancy between his VIQ and PIQ on the WPPSI – R. The suggestion was made that he would improve with practice. The fact that he was also gifted was not taken into account.

Further investigation did not take place until David was in Year two. He was taken to a private occupational therapist who identified that he had substantial gross and fine motor control problems and an intervention program was initiated. He was also assessed by an optometrist and a complementary therapies doctor. As a result of the various assessments, SAMONAS sound therapy was suggested for his auditory processing, occupational therapy for his fine and gross motor deficiencies and lenses for eyesight problems. No practitioner considered the ‘big picture’ to ensure a program could be developed that would take not only his disabilities into account but also his giftedness.

Although he was not very forthcoming about his problems, David himself admitted that he found some things difficult and expressed that his way of dealing with it was to just daydream and forget it.

I have problems with lots of things. Tables, I haven't really learnt them well but I understand the concept involved. I try but then I just daydream and forget about it. (Interview 21/1/08)

8.6 PARENT RESPONSE

David's mother was aware that from a very early age he was gifted and it was not until he was required to write at preschool that she wondered whether he might have a problem. She was not concerned, as she did not want to push David and felt that he would do it when he was ready. *“I thought he'll do it when he's ready. I'm not into rushing kids”* (Parent interview 21/1/08).

Kindergarten highlighted the possibility that David had problems. Despite his giftedness he was beginning to fall behind the other children in his class. He was not reading or writing at the same level as the rest of the class and half way through kindergarten the school and the parents decided it was time to investigate further.

Despite the results of the WPPSI – R indicating giftedness, the counsellor’s advice to David’s mother was to consider an occupational therapy evaluation and “*he’s in a bad situation this year. He’ll probably do much better next year*” (Parent interview 21/1/08). Occupational therapy assessment found that David was not performing at a below average level in any aspect and therefore could not be considered for any intervention programs.

Despite being compliant and continuing to go to school, David was “*shutting down*” which was demonstrated by the “*smile going from his face*” (Parent interview 21/01/08). Half way through Year one David was still not reading, and after his mother visited the school and discovered him “*sitting like a frightened mouse*” (Parent interview 21/01/08) in the classroom, she decided that further action had to be taken. The NSW Association for Gifted and Talented Children Inc (NSWAGTC) was contacted and David attended an Association workshop. When his mother with some trepidation came to pick him up, she discovered a little boy whose “*light had been struck again*” (Parent interview 21/01/08). As a result of David’s enthusiasm after attending association workshops she decided it was necessary and time to consult a private occupational therapist. The therapist identified several areas of difficulty for David. An intervention program was undertaken, resulting in improved confidence levels as well as improvement in other areas of his physical development.

Despite a second IQ assessment which again showed that David was gifted but had learning disabilities, the school continued to only focus on his disability and were in denial about his giftedness. The Year two teacher had nothing positive to say about David and, when told that he had been assessed by the school counsellor as gifted, responded by saying “*well he’s not the normal gifted child, actually he’s ordinary, very, very ordinary*” (Parent interview 21/1/08). The school counsellor also admitted to the parents that she had had a terrible time convincing the school that he was gifted (Parent interview 21/1/08).

David’s mother decided that, as he was still not reading, she had to do something about helping him to read. She found a way to teach him that he responded to, and as a result his reading and interest in reading improved dramatically. She had been

reluctant initially to do this as she did not want to “*hassle teachers being one myself, it’s a fine line to tread*” (Parent interview 21/1/08).

No changes were made in the classroom to accommodate David’s educational needs and in fact he was beginning to experience severe anxiety and refused to go to school. As they arrived at the school gate one day he explained to his mother what going to school was like for him.

You don’t know what it’s like when you bring me to this place. It’s like a nuclear bomb going off in my stomach, it spreads to my head and I can’t think and it spreads to my hands and I can’t make them move. (Parent interview 21/1/08)

Up until Year six the focus of David’s education had been on his learning disabilities with drill and practice being the preferred method for remediation, to the point where for each spelling mistake he would have to write the word out 50 – 100 times. The teacher commented to David that “*as you have wasted my time I am going to waste your time*” (Parent interview 21/1/08). During this period David’s anxiety levels were rising to the point where the school applied for and received funding to support David with respect to his anxiety. David’s mother could not emphasise enough the severe stress and anxiety he experienced throughout primary school and the effect this had on the whole family as they watched him change from a happy child to one who was anxiety ridden (Parent interview 21/01/08).

It was not until Year six that David got “*the teacher that you wait to get, that I thought most teachers were like*” (Parent interview 21/01/08). This teacher nurtured David and acknowledged that he was very bright and that he was scoring highly in some areas but not so well in others. As a result of the work this teacher did with David he was well prepared for high school. He participated in a transition program for students going from Year six to Year seven and the funding that David was receiving in primary school was continued.

High school has been an entirely different experience for David, even though he still says he doesn’t like school. The high school has been more willing and

interested in learning more about David. On Open Day one teacher commented after David's mother mentioned a particular characteristic of David to the teacher, "*Oh, now I know why children do that*" (Parent interview 21/01/08). In primary school the mother had encountered an "*I know best, you're to blame for why your child is like he is*" (Parent interview 21/01/08) sentiment, yet the high school was more positive and supportive. The counsellor ensured that David was put in the enrichment class in high school although the parents were warned that he might come last in everything despite the fact it was an appropriate placement for him considering his giftedness. David came 5th in History in Year seven and was included in a social skills group because "*we want to give him something he likes about school*" (Parent interview 21/01/08).

David's mother is aware that even though he has come a long way and substantial improvements have been achieved, there are still issues that need to be addressed.

8.7 DAVID'S UNDERSTANDING

David has probably been aware from an early age that he found certain things difficult. He may not have been able to verbalise this at an early age, but he demonstrated his understanding by taking his hat off when asked to write his name at preschool because it had his name stitched on it, and by writing in "*Chinese*" or "*underwater African*" when asked to write (Parent interview 21/01/08). On other occasions which required physical activity, he would just watch and observe. He was using his visual and cognitive skills to plan how to do the activity before attempting it, hoping to reduce or eliminate the risk of failure.

When discussing school with David he did not have a lot to say except that he found it boring. He did not like most subjects but seemed to have a particular dislike for Maths, stating that "*I don't like maths, it's hard and boring*" (Interview 21/01/08). This is most probably linked to his disability in numeric operations as highlighted by his result in the Arithmetic subtest on the WISC - III. He preferred all branches of science, except physics, which is possibly linked to his problems with calculations. David preferred high school to primary school because of the variety of subjects, and also because he had more friends than he had in primary

school. He was very aware that he had to go to school but that did not mean he had to like it. *“The point of school is to teach you things but I still don’t like it. Yeah I need to go, I know I have to go but I don’t like it”* (Interview 21/01/08). His mother commented that even in Kindergarten he obviously didn’t like school.

Even in Kindergarten he used to want to know who invented school, “let me talk to them because I can’t understand why they put children through such a thing. I want to talk to them; I want to ask them why they are doing this to us. Why should they invent such a thing?” (Parent interview 21/1/08)

David had some ideas about what school work should be like and what he considered positive traits in a teacher. He would like the teacher to list the ways they would teach, to be friendly, to give less work and deliver it in a more fun way rather than just saying *“do this, do this, do this and this”* (Interview 21/01/08). He would have liked to have had less work and not have everything delivered through either writing on the board or the teacher handing out sheets. He would rather more variety in the presentation of material.

The possibility that David was underachieving was very real. His dislike of school and his ability to deflect attention away from the task at hand meant that he was able to hide his true abilities and disabilities. Several times his mother stated, *“It’s been hard to tell whether he won’t do something, whether he can’t do something or whether it’s something to do with his giftedness and I think it’s probably a combination of everything”* (Parent interview 21/01/08).

This is an insightful comment and demonstrated the difficulty for a teacher in the classroom in meeting David’s needs. It was also a very clear demonstration of David’s giftedness and his ability to hide his disabilities.

8.8 FAMILY EFFECTS

Having a child who is gifted with learning disabilities has meant that there has been a cost to the family financially, in time, in research, in planning as well as an emotional cost. The family has paid for private assessments, intervention programs

and counselling. They have consulted with psychologists, occupational therapists, optometrists, a complementary therapies doctor and purchased supplements and implemented intervention programs. They have compensated for a lack of intellectual stimulation in primary school by providing opportunities such as Mind Quest and NSWAGTC activities and camps for David.

The family has had to cope with the emotional effects on David being so severe that funding had been provided by the Department of Education for intervention support for his anxiety. David's mother had given him mental health days to help him deal with the stress and anxiety of school. The school had been aware that his mother was doing this. The family was seeing different behaviours at home compared to those being displayed at school as David was stress free when school work was not involved.

The time involved in taking him to the intervention programs and continuing the programs at home has meant balancing David's and his parents' commitments, as well as those of his sister. Undertaking assessments and consulting with a variety of professionals in the private sector became very expensive, very quickly, and at times dictated the length of time the intervention was applied with the professional.

Even though David's parents had consulted with professionals and been prepared to share the information and work provided by these professionals with the schools, they have had to endure scepticism and disbelief from school teachers and principals. The primary school's reaction highlighted for the family that there are many in the educational field that have little or no understanding of gifted education and even less about gifted students with learning disabilities. The relief and understanding felt when the high school demonstrated understanding and acceptance of David was immeasurable. His family was very aware of the difference an understanding teacher and school community made to David's education.

8.9 CONCLUSION

Overall, this family gave the impression that they are coping most of the time with having a child who is gifted with learning disabilities. The school situation at the moment is stable; there are ongoing intervention programs, awareness that there are still issues to cope with, and recognition that there are positives as well as negatives to the situation they have found themselves in. A support group has played a large part as a source of information and provided the parents with the realisation that they are not the only ones who have children who are gifted with learning disabilities and have serious issues with schooling. It has also been an advantage that the parents have been able to source information and provide David with a substantial amount of support.

CHAPTER 9

CASE STUDY 5

SCOTT

9.1 INTRODUCTION

This chapter will discuss the process of identification of Scott as gifted with a learning disability, the interventions undertaken and the effects on the family and Scott of being identified as gifted with a learning disability.

9.2 BACKGROUND INFORMATION

Scott is the middle of three children with an older and younger brother. He lives at home with both of his parents and his younger brother. His older brother has moved out of the family home and works full time. Both his mother and father are teachers and at the time of the research Scott had just completed his schooling and was working four days a week in the retail industry.

Scott's schooling was completed utilising a combination of education systems and schools. He initially attended a Kindergarten to Year two school, moving to a local mainstream primary school for Years three to six. Year seven was undertaken at a local high school. Years eight to ten were completed through a combination of attending a high school support centre, distance education and part time at the local comprehensive high school. For his final years of schooling he completed subjects in the NSW Higher School Certificate with additional subjects completed through the college system in the Australian Capital Territory (ACT). Subjects undertaken were not only completed in two different education systems, but also utilising two different methods of study. He attended college classes and participated in Distance Education. Distance Education meant that he could work at home and at his own pace.

Distance Education meant that Scott was sent subject material in the form of booklets including study notes. He was required to complete set work, usually by answering short questions. The completed work was then returned, marked and feedback provided. Assessments were clearly presented and scaffolds were also provided to aid Scott in the organisation of his work. Resources and reference information were provided. Teachers could contact Scott by phone if they needed to talk to him, and if he needed to speak to a teacher he was able to ring them.

Scott's mother was aware from birth that he had problems as he had difficulty feeding and suffered from various allergies, as well as vomiting constantly. Scott's feeding problems and his reflux were, in his mother's opinion the first indications of motor dyspraxia (Email 07/04/09).

When Scott was in Year four his father was involved in a very serious motor accident which required extensive and repeated stays in hospital for treatment at a location that was hundreds of kilometres from the family home. This meant that Scott's mother was sometimes away from the home and was therefore unable to take him to his various interventions and he did not have the support of his father as his father struggled to recover from the accident. This difficult time also affected the relationship with his older brother.

9.3 IDENTIFICATION

Scott presented as a quiet, shy, young man with a steely determination to be part of this research despite the emotional cost to him, in order that other young gifted students with learning disabilities could be spared what he went through to achieve an education. *"Talking about this is really difficult but I've got to get the information out there"* (Interview 02/08/08). The discussion brought to the surface the trauma he had experienced throughout his schooling. At times he could not respond due to the distress he felt, so it was decided that he would use a word processor to express the thoughts and opinions that were too difficult for him to verbalise. The researcher provided words and statements as prompts for Scott to use in order to provide appropriate data.

Problems were evident from birth with Scott having trouble sucking, and suffering from reflux, which affected his physical development. Scott was slow to walk and crawl due to his inability to lie on his stomach as a result of the reflux. He walked at 18 months but was clumsy and looked awkward. As a toddler when Scott fed himself, he would turn the spoon upside down as it approached his mouth in order to be able to remove the food from it. He did this because he was not able to get his lips to remove the food. He continues to eat this way, but now turns the implement over once it is in his mouth (Parent written statement 01/01/08).

At 4 years of age Scott could not dress himself in the correct order without help, even though he did it every day, but he was verbally precocious, aware of world events and could complete complex puzzles and build entire worlds from duplo (a plastic interlocking block), mobilo (plastic interconnecting shapes) and wooden train sets. Despite his difficulties and at the appropriate age, his parents decided to send him to preschool as his brother attended the school and it was a small school for children from preschool to Year two. It quickly became apparent that Scott had substantial problems. He was unable to sit on a chair without falling off, and could not sit still on the floor without accidentally disturbing the other children. He avoided fine motor tasks and when painting, only painted bushfires – a whole page of black with a little red at the bottom of the page. Gross motor skills were also a problem and as the whole school did the health hustle (a rhythmic exercise pattern), he avoided group physical activity at school (Parent interview 02/08/08).

Despite these problems Scott was keen to learn and was not disruptive at preschool. Other issues became obvious, though, with him starting to dribble and exhibit stress behaviour, such as chewing the collars of his shirts. As a result of consultation with a Government Health Service, occupational and physiotherapy assessments were conducted and a paediatrician consulted. Scott was diagnosed with a motor planning disorder known as dyspraxia. The possibility of giftedness was not considered at this stage. Scott started weekly sessions with an occupational therapist and fortnightly sessions with a physiotherapist. Thus began the long term process of undertaking various intervention therapies for Scott (Parent written statement 01/01/08).

9.3.1 IQ Assessment

An IQ assessment was completed as a result of Scott being excluded from reading groups in Kindergarten, as he could not write his name whilst the other children could. The teacher assumed that as he was unable to write his name he was not developmentally ready to learn to read, and instead he was sent outside to paint or play. The assessment was organised by Scott's mother. She arranged for the Education Department's school counsellor to assess him and to also consult with, and advise the teachers about strategies to implement for Scott. A WPPSI – R was administered at age 5 years and 6 months (see Table 9.1 for results). The results indicated that Scott had strengths in a range of areas but also significant difficulties. *"We focused on the fact that the IQ was in the slightly upper range so potentially he would be able to undertake tertiary studies"* (Parent interview 02/08/08).

The IQ report noted that Scott had difficulty with the Block Design and Geometric Design subtests and that his attempts at these subtests were very poor. Both these tests rely on visual, perceptual and motor skills and, as a result, it was recommended that special allowance be made at school for the specific motor tasks that Scott was asked to undertake in the classroom (Report dated 12/09/94). As a result of the IQ testing Scott was allowed to join the reading groups and was given books to take home so that he could catch up. Within two weeks Scott had advanced to the middle reading group and shortly after, the top group, to the surprise of the teacher. *"Well I have learned something new; some children just don't fit into the developmental continuum at all"* (Parent interview 02/08/08).

In Year three, at age 8 years and 7 months, Scott was assessed by the school counsellor using the WISC - III as the classroom teacher struggled with his demonstrated limited physical skills and his obvious abilities (see Table 9.1 for results). Scott's scores on the subtests ranged from a low of 9 to a ceiling score of 19. There was a small discrepancy between his VIQ and PIQ with his FSIQ placing him at the 98th percentile. The counsellor noted that Scott was a *"very cognitively able child"* (Report dated 25/09/97). Scott did not demonstrate the same difficulties with the Block Design subtest on the WISC - III as he did with the Block Design subtest on the WPPSI – R. The counsellor noted that this could possibly be due to

the interventions to improve his fine and gross motor skills that Scott's parents had previously implemented (Report dated 25/09/97).

The Stanford Binet Intelligence Scale: Fourth Edition (SB:IV) was administered at 13 years and 5 months as Scott's parents were seeking alternative forms of education and wanted to understand more about his potential, and possible future achievements (Parent interview 02/08/08) (see Table 9.1 for results). Scott's Verbal Reasoning and Abstract Visual Reasoning score was at the 99th percentile which placed him in the gifted range in these areas. Scott's scores on all subtests except Memory for Digits placed him in the above average range for his age group. The lower score on Memory for Digits test indicated that he had higher ability at auditory memory when presented with meaningful sentences than when the information is non-meaningful as in a list of digits. His composite score had not been calculated due to the discrepancies between his other test scores. It was noted in the report that Scott required a lot of time and thought before responding to the items on the test (Report dated 16/07/02).

Table 9.1 IQ Assessment Results

WPPSI – R DOA 15/08/94 CA 5.6 yrs			Sub tests	Sub test scaled scores
Verbal IQ (VIQ)	Above average range	116	Information	11
			Similarities	13
			Arithmetic	9
			Vocabulary	15
			Comprehension	15
Performance IQ (PIQ)	Average range	95 Pro rata – 4 best scores 110	Sentences	13
			Picture completion	13
			Block Design	4
			Object assembly	12
			Geometric design	5
			Mazes	13
			Animal pegs	8
Full Scale IQ (FSIQ)	Average range	107 Pro rata – 115 <i>Should not have been calculated due to the discrepancy between VIQ & PIQ (Report dated 15/08/94)</i>		
WISC – III DOA 25/09/97 CA 8.7yrs				
Verbal IQ (VIQ)		97%ile	Information	14
			Similarities	19
			Arithmetic	10
			Vocabulary	13
			Comprehension	19
			Digit span	13
Performance IQ (PIQ)		96%ile	Picture completion	16
			Coding	9
			Picture	11

		arrangement	
		Block design	19
		Object	15
		assembly	
		Symbol search	
Full Scale IQ (FSIQ)	98%ile		
Stanford Binet IV			
16/07/02			
CA 13.5yrs			
Verbal Reasoning	136 – 99%ile	Vocabulary	67 – 98%ile
		Comprehension	63 – 95%ile
		Verbal relations	66 – 98%ile
Abstract/visual Reasoning	136 – 99%ile	Matrices	58 – 87%ile
		Paper Folding & Cutting	72 – 99.7%ile
Quantitative Reasoning	116 – 84%ile	Quantitative	58 – 84%ile
		Number series	56 – 77%ile
Short Term Memory	115 – 83%ile	Memory for sentences	66 – 98%ile
		Memory for digits	50 – 50%ile
		Memory for objects	52 – 60%ile
Composite Score	N/A		

9.3.2 Visual Assessments

Scott was initially assessed by an optometrist in Year two and had been wearing glasses since then (Report not available). Scott was reassessed by a developmental optometrist at 13 years of age when his parents were considering alternatives for his education. Reassessment was undertaken as a result of bullying incidents and a lack of support from the principal of Scott's school (Parent interview 02/08/08). He was found to still be short-sighted (myopia) for which new spectacles were prescribed for classroom and close work. In addition, assessment of his perceptual/processing skills demonstrated that his Visual Memory was below the age norm at the 1st percentile and his Visual Sequential Memory was at the 77th percentile which is

average for his age. As a result, it was noted that Scott would have difficulties with spelling and would require additional help in this area (Report dated 27/03/02).

9.4 PHYSICAL DEVELOPMENT ASSESSMENTS

Scott was initially assessed at 4 years and 7 months of age by an occupational therapist at the local area health service. It was undertaken as his mother had observed that Scott had difficulties with his fine motor skills and dressing, and frequently fell whilst playing in the playground. The report from the occupational therapist provided to the researcher did not list the specific tests conducted at this time, but gross, fine motor skills and thinking skills were assessed. The report noted that Scott was generally cooperative but refused to do tasks which he thought he might have difficulty completing (Report dated 23/09/93).

Scott was able to walk a balance beam, throw a ball adequately for his age and briefly balance on one foot. He refused to try jumping and hopping. Scott was able to copy various positions except when crossing the midline was involved. Despite not wanting to cross the midline he had established left hand dominance. When his fine motor skills were assessed Scott was able to complete many age-appropriate tasks. He could place five pieces of dowel according to size, place three pictures to make a story, name four primary colours, identify a square, a circle and a triangle, count five objects - and in fact counted up to ten even though the test only required him to count to five - copy a block pattern, thread small beads, and complete a nine piece jigsaw. Scott had difficulty cutting out a triangle or circle as he did not know where to start. Additionally he could cut along a straight line but had difficulty organising the task. This difficulty with organisation was also observed when he was threading small beads and lacing a board. Scott's drawing of a man was immature and he held his pencil with three fingers resting on it. When asked to copy some finger positions he was only able to achieve them with great thought and with effort to avoid doing it. He had great difficulty touching his thumb to each finger. The recommendation at this time was for the family to consult with a physiotherapist in order to establish an intervention program and for a review to be completed in the near future (Report dated 23/09/93). As part of the occupational therapist's assessment Scott's mother was asked to complete a checklist for

identifying children with motor planning problems (see Appendix G for the completed checklist). Scott's mother ticked every box on the form.

A physiotherapist was consulted and observed that Scott had difficulties with balance, low tone, poor rhythm and coordination, difficulty hopping and that he jumped by lifting his knees rather than springing from the floor. Scott could gallop but not skip, used alternating feet going up stairs, but came down with one foot joining the other. He attended physiotherapy once a month and maintained the program at home (Report dated 26/11/93).

In addition to physiotherapy, and to help Scott with his dyspraxia, his mother enrolled him in a program of Riding for the Disabled. The physiotherapist noted in a report to the director of the program that Scott had poor balance, both in the sitting and standing positions, and that his sitting balance was particularly poor on the left side, as his right side trunk muscles did not react as they should. It was also noted that his low tone meant he did not have endurance strength (Report dated 04/02/94). Scott also participated in a special gymnastic program and the physiotherapist noted in the report to the instructor that, "*Scott is very good at avoiding an activity that he found difficult and therefore it was necessary to alternate challenges with easy tasks which he can enjoy showing off, thus increasing his confidence to try again*" (Report dated 28/04/94). This program was undertaken during school time. Scott's mother had felt that school was a difficult and stressful time and that he benefited more from these programs than from sitting in a classroom (Parent interview 03/08/08).

Additionally Scott also undertook personalised swimming lessons and the physiotherapist made recommendations to the teacher for activities that would help him with his physical development. It was suggested that he jump in shallow water, walk in shallow water in all directions and practise freestyle kicking to strengthen his ankles. In order to teach him the different swimming strokes it was suggested that the skills required be broken down into very simple actions, and gradually built up to more complex actions. To improve his balance it was also suggested that he move about in the water so that he could adapt to the changes in the flow of the water (Report dated 09/06/94).

Continual re-assessment of Scott's physical disabilities was undertaken over a period of years by the occupational therapist as he completed various intervention programs. It was noted in a report in 1997 that Scott had made significant improvements not only because of maturation "*but also because of the enormous efforts that were made by his mother and by Scott*" (Report dated 12/06/97). This comment was also made by one of Scott's primary school teachers, and the teacher at the high school support centre that he attended (Teacher interviews 08/11/08 & 09/11/08). Occupational therapy and numerous other physical interventions continued throughout Scott's schooling.

Initial school observations of physical development were undertaken in Kindergarten in conjunction with IQ assessment. Scott was observed in the classroom, during free play and in a gross motor class. It was noted that as Scott moved around the classroom he bumped into other students, but it did not appear to be deliberate, rather he demonstrated a lack of awareness of his body in space, indicating proprioceptive difficulties. During gross motor activities, Scott practised avoidance and was selective about what he chose to do. He could draw an age-appropriate picture of a man but his drawing was large and pencil control awkward (Report dated 12/09/94).

Prior to Scott entering high school an assessment was undertaken to determine what technology options would be of help to him, and to support an application for additional funding in order for the school to support Scott. Prior to this Scott had had access to computers both at school and at home, and he had been encouraged to do as much work as possible on the computer. Computers were available in the high school Scott was to attend, but they were only available in a specialised computer room and not in the everyday classroom. The assessment was undertaken by an organisation specialising in helping people with physical disabilities.

Scott was assessed at 11 years of age using the Bonney and Perk's Handwriting Observations (1993) and the Handwriting Speed Test (Wallen, Bonney & Lennox 1996) (see Appendix G for Scott's handwriting sample). Scott's posture when writing was poor with him tilting forward excessively over his page and weight

bearing through his arm, as additionally he demonstrated tension in his shoulders. Instead of moving his writing hand smoothly across the page he moved his whole arm and body. His handwriting was not fluent and he held his pencil in a crude tripod grip several centimetres above the tip. Index and middle fingers were hyper-extended against the shaft of the pencil. His writing was illegible and very messy, writing pressure was excessive and he had trouble controlling the pencil. *“Spatial organisation, visual discrimination and visual sequential memory deficits were evident in his handwriting sample. Letter formation and sizing was significantly impaired. He required several A4 pages to write 2-3 sentences with letters varying 2-4cm in height and excessively spread across the page. He was unable to write in a straight line even when given lined paper”* (Report dated 18/08/00).

Scott’s results in the Handwriting Speed Test were:

- *Total number of letters* 113
- *Letters per minute* 38
- *Scaled score* 3

These results placed Scott in the bottom 1% of students when compared to male Year six students. Despite years of occupational therapy Scott’s handwriting had failed to improve. Scott required several breaks during the writing assessment and commented that his hands were sore. It was noted in the report that his handwriting speed and written output would become comparatively worse in relation to his peers as his schooling progressed, and therefore it was imperative that an alternative to handwriting be used (Report dated 18/08/00).

Suggested recommendations were that he use the Write:Outloud and Co;Writer software packages which he trialled, but did not find useful and discontinued using. A lightweight laptop was suggested with a separate mouse to provide for portability between classrooms in high school. This suggestion was not implemented by the school (Report dated 18/08/00).

Letters were written by several specialists – general practitioner, paediatrician, occupational therapist, psychologist, and physiotherapist – to support an application

for special provisions for Scott in his pursuit of an appropriate high school education program. These letters covered the following areas of disability for Scott:

- Balance;
- Low muscle tone;
- Rhythm and coordination; and,
- Severe motor dyspraxia leading to:
 - an inability to write at a functional speed;
 - him tiring quickly and easily;
 - requiring regular breaks from written and other physical tasks;
 - information being presented in a visual form; and,
 - special provisions for exams and assessments.

The initial application for additional funding to support Scott in high school was rejected and as a result he was not provided with a laptop or access to specialised technological support in Year seven.

9.5 DISCUSSION

Initially Scott's physical developmental problems were the focus of assessments and interventions as these were having a large impact on his ability to learn and participate at preschool, and later at school. Despite these physical difficulties Scott was verbally precocious and aware of the world around him. From an early age he was building complex worlds with his building blocks and completing puzzles that were at an advanced level for his age.

Scott and his mother, with the help of committed professionals, worked very hard to improve his physical capabilities and provide tools to compensate for the disabilities that affected his ability to learn and achieve in the classroom. Scott's IQ assessments indicated that he was in the gifted range, but did not indicate that he had severe motor dyspraxia which affected his ability to learn and to achieve his full potential. The misconception that he could not be gifted was highlighted by the kindergarten teacher not including him in reading groups. Only as a result of continued advocacy by his mother, the health professionals they worked with, and a

few teachers, was his giftedness recognised and efforts made to support him so that he was able to complete his schooling.

9.6 PARENT RESPONSE

Scott's mother has been on an incredible journey as she supports her son in his endeavours to achieve his potential. School issues initially arose when Scott was in Kindergarten, and sent outside to play because he was excluded from reading groups due to the fact that he could not write his name. This was despite the school being informed of Scott's physical disabilities. As a result of the assessments undertaken at this time, Scott received counselling from the school counsellor, and from this point in time his parents talked to him frankly about his difficulties. They also began the process of seeking programs that would help him develop his physical skills and in which he could excel, and that were different from what his brothers were participating in. A program of gymnastics for students with a disability and individual swimming lessons for the disabled were commenced. Additionally, a paediatrician was consulted at this time and a trial of medication commenced. The medication for Attention Deficit Disorder (ADD) had a beneficial effect on his motor skills. He was able to sit on a chair without disturbing other children and it seemed to reduce his extraneous movements. Unfortunately, gastrointestinal and appetite problems developed as a result of the medication. Despite these issues and because of the benefits to Scott's physical performance he continued on this medication as his parents could not afford the alternative medications. Scott learned to live with the side effects of the medication in order to gain from the benefits of taking it (Parent written statement dated 01/01/08).

Year one was a difficult year and as a result Scott produced some of his best creative efforts at avoidance tactics. The pressure was mounting at school, as more writing was expected of the students, and occupational and physiotherapy was ongoing as well. His mother noted that these professionals were very patient and encouraged and persevered with Scott, and that they had since become lifelong friends of the family. The professionals continued to work with Scott throughout his schooling. Suggestions were provided to the school for alternative ways for Scott to express himself other than handwriting, with little cooperation from the

school. Scott required many sessions with the occupational therapist in order to be able to dress himself properly. He would put his clothes on in the wrong order, socks over shoes, pants on backwards. The final solution was to provide him with a series of photos showing the correct order. Shoelaces were another problem. *“In the short term spring laces or Velcro was used. Sometimes there is just too much to tackle and you have to find other ways to make life easier for a while”* (Parent written statement dated 01/01/08).

The end of Year one brought a change of school, as Scott’s older brother had outgrown the original school which only went to Year two. Additionally none of the educational strategies suggested for Scott had been implemented by the school. A school was found that suited both boys and was accessible by bus. This school had a strong special needs support team and a gifted class which his older brother was placed in. The first year at this school was a good year for Scott as he was supported at school and he continued his various therapies – to which his mother took him as much as possible at lunchtime.

Following the good year, Scott had a teacher who struggled to come to terms with his obvious ability, and his inability to physically write and to organise his thought processes. Despite concerns for Scott’s self-esteem he was placed in a gifted group within a streamed class. His parents felt that it was better for him to be challenged academically even if his achievement levels were low. At this time Scott was provided by the Education Department with a support teacher who taught him to touch type. Typing, however, is a motor planning task like handwriting, which meant that even though Scott’s work was legible he still found it difficult to type. Also he still could not spell well enough for the spell checker to be a useful aid. Additionally expectations of performance and demands in the classroom were increasing. Scott’s parents also applied for a disability pension for Scott which was granted, and was continued until he reached 16 years of age. This additional money helped pay for the interventions and assessments as well as the cost of travel required in order to access them.

The school had a dedicated Year 5/6 class for gifted students with a teacher who was trained in gifted education. She requested that Scott be placed in this class,

which was done despite the school's objections as they did not consider him gifted. This teacher had taught his older brother and had deliberately sought Scott out in the playground and after a number of conversations with him concluded that he was also gifted. In this class Scott was provided with leadership opportunities, access to technology, participation in competitions, and he found a friend "*who was as tall as Scott was short*" (Parent interview 03/08/09). A Special Teacher Learning Assistance (STLA) who also had a good understanding of Scott was provided for the class. The support specifically for Scott was minimal as the support teacher was allocated to the whole class and not one specific student. The classroom teacher noted that it was important to have a good match between the STLA and the student, and that it was important that the STLA not do the writing or other work for the student (Teacher interview 02/11/08). Scott continued to have difficulties with handwriting, and because of number and letter reversals did his maths in his head making many careless errors. Scott did not let these issues stop him from trying even though he still practised avoidance activities. It was in Year six that he wrote a poem on the environment and produced a pamphlet on research about the Tasmanian tiger using the computer.

Planning for Scott's transition to high school was started well in advance of attendance. Extra funding was applied for and the local high school was selected, as it was easy for Scott to get to, which was a consideration in view of the fatigue he suffered from. It was also a smaller school and was willing to accommodate Scott's special needs. Unfortunately this willingness was based on the possibility of gaining extra funding. This funding was denied despite the fact that Scott received a disability pension. Funding and additional support were denied on more than one occasion because Scott was not disabled enough and because of his high IQ. Scott's first year of high school was a traumatic year. Without the additional funding the school was unable and unwilling to respond to his special needs. As Scott was not achieving to an expected level in class, the school suggested that he should be dropped several academic levels. His parents felt that this would cause untold psychological damage to Scott. He was harassed and verbally and physically abused by his peers. On one occasion he was dragged from the classroom by students and thrown down and rolled in the dirt. The principal's response to the parents was "*It was all right for a bright student to end up working on the roads*

and he knew plenty of students who had ended up that way” (Parent written statement dated 01/01/08). Scott was withdrawn from the school as the school could not give his parents a guarantee that he would be safe, and alternatives were sought for his education. Scott became distraught as a result of the treatment he had received at the school and talked about killing himself. He had talked in these terms previously as a result of incidents at primary school, but the talk was becoming more frequent. As a result, Scott attended counselling for an extended period and also at various times throughout his schooling.

Whilst investigating alternatives for Scott’s education, his parents consulted with the Paediatrician and his medication was adjusted but with Scott controlling the amount he needed, depending on the demands of the day. After considerable research and consultation, and with the support of the Director of Schools, a caring teacher and a youth worker, Scott began an alternative form of education. He studied English, maths, history, geography and Health/PE through distance education, and attended a support centre one day a week to interact with other students, receive support and play games. When the principal of the local high school retired, Scott was invited back to the school by the new principal. He attended the high school for electives, and overcame the issues he had previously experienced with the other students by limiting his attendance. This method meant that Scott was straddling two education systems. He was completing the distance education subjects through the NSW Department of Education and Training (NSW DET) and the remainder through the ACT Education System.

This period of time from Year eight to Year ten was a confidence-building time for Scott as he was more in control of his learning, and the distance education teachers allowed him to modify or change his assignments so that they were more challenging and appropriate, and more in line with his interests. During these years he received awards each year at the awards nights and at the end of Year ten received an award for every subject except history and advanced maths. At the same time, Scott was continuing his other activities and interventions and still experiencing difficulties with many aspects of his life.

Due to Scott's growing confidence he decided to "*do school*" (Interview 03/08/08) again for Years 11 and 12. He planned to take three years instead of the usual two to complete his Higher School Certificate (HSC). The biggest concern for Scott was his inability to take notes. He could not listen to the teacher and take notes at the same time. He also found that because of his handwriting he often missed notes that were written on the board as they were rubbed off before he had a chance to copy them into his book. Scott often felt overwhelmed during this time but with the support of his counsellor he began to negotiate due dates and workloads with his teachers. One teacher provided him with notes prior to exams to help with his study but other teachers refused to do so.

A meeting was held at the end of Year 11 with Scott, his teachers and his parents in order to review the previous year, and to assess what could be done to further support Scott. "*Fairness came up a lot in the discussions. People could not decide what was fair on other students. Our position was: distribute the same lesson notes to all students – those who want to study will and those who don't, won't*" (Parent written statement dated 01/01/08). The outcome of the meeting was that Scott went back to a combination of distance education and school attendance. Scott found maths problems that were presented out of context as in an exam, very difficult. Due to his poor visual memory he would spend an inordinate amount of time trying to recognise the topic it was related to, and then trying numerous ways to solve it. As a result, Scott repeated maths at a lower level.

The science department was supportive of Scott and installed wireless technology so that any notes written by the teacher automatically downloaded onto his computer. This technology was available to all the students in the class but he was the only student to make use of it. Scott states that although it is still installed in the school the current students do not use it (Interview 02/08/08). English assessments presented Scott with a challenge as they were based on 30% for an oral presentation, 20% for an in-class essay, 20% for a creative response and 30% for a book-mark. In Year 11 Scott's poor book-mark lowered his overall result and he found the oral presentations very stressful, to the point of making him physically ill. After some negotiation and as a result of having to change the assessment criteria for Scott, the teacher found it beneficial to change the criteria for the whole class.

The book-mark was changed to an at-home essay assessment. Scott stated that this change was currently still in place in the school. He still had to give an oral presentation but initially he did it to a smaller group and with practice was able to present to the whole class (Parent written statement 01/01/08). Scott's final year of schooling was a success.

He used his strengths to best advantage, devising unusual topics for his orals and creatives and presenting his ideas using his visual spatial abilities to design advertising campaigns and pamphlets. He grew in confidence in the classroom relating the discussion to outside events and expressing his rather political and strong opinions. One oral presentation he gave for a Fantasy class questioned the difference between fantasy and faith and opened up some enthusiastic class discussion. (Parent written statement 01/01/08)

The final hurdle for Scott was to sit state-wide exams for the subjects he had studied through distance education. Special provisions were applied for, and after a battle with the relevant authorities, he was granted seven and a half minutes per half hour extra working time in addition to five minutes of rest time (Parent written statement 01/01/08). While this was beneficial, it meant a 3 hour exam became a 4 hours and 15 minutes exam, a feat of endurance.

His has been a long and difficult road but he has always worked hard towards achieving his goals. He has amazing tenacity which is a strength he has developed because of his disability as well as his love of learning. (Parent written statement 01/01/08)

9.7 SCOTT'S UNDERSTANDING

Scott was a very determined young man. He had endured continual assessments and intervention programs. He had been bullied at school and he had to put in a huge amount of effort in order to achieve at school. He was very concerned about the environment and completed amazing projects on the environment for major school assessments. His determination helped him achieve some remarkable feats. Scott's

concern for the environment is demonstrated through a poem he wrote at 11 years of age, titled *The Island* (see Appendix G for the full poem). It took him 20 pages of his awkward handwriting to complete.

There is a land, untouched by humans,

It's quiet and calm

Animals around every tree

It's a paradise, untouched by humans

Waves calmly swamp the shore

While under the water fish swim by

And on the bottom in the reef eels hide in the colourful coral

In this paradise, untouched by humans

From an early age Scott was aware that he had difficulty doing some activities that were easy for other children. He knew he was not stupid, but he could not make his body do what he wanted it to do and he found this very frustrating. His understanding that he was also gifted did not come until he was in Year four when he was in a class for gifted students, but he also knew that he had to work harder than everybody else in order to achieve.

Avoidance was a highly developed skill for Scott. He had many ways to avoid undertaking a task that he felt might be problematic for him to complete. This began as early as preschool with his bushfire paintings. At other times he would just not do anything, or he would deliberately forget his school supplies, or knock his books off the table and then pick them up. He felt very self-conscious about his handwriting and did not like others to see it. In Years five and six when he worked on a laptop he would sabotage it by tripping over the cord or close without saving and lie that he had saved and couldn't understand why the work was not there. Scott also had intimate knowledge of all the available applications on a computer and discovered that the largest font size available was 154. As he got older he would use emotional ploys to get out of work by using issues that were upsetting him, to his advantage. Knowing that others were aware that he suffered from fatigue he would feign extreme tiredness even when he wasn't. *"However tiredness is part of*

me, a full day of work really does tire me out. It was quite a shock when I started 9 hour shifts. When I was a casual you rarely worked more than 6 hours at a time”’
(Written statement dated 03/08/09).

Two teachers that Scott had in primary and high school were aware of his avoidance ploys and would not let him get away with such activities (Teacher interviews 08/11/08 & 09/11/08). These teachers had advocated for Scott throughout his upper primary and high school years. His Year 5/6 teacher had fought for him to be placed in her class which was a class for gifted students. This teacher listened to Scott and his parents. She listened to the vocabulary that he used and despite the fact that he couldn’t write, couldn’t form his letters properly and was considered a learning assistance student, she could see beyond these inabilities to his potential. She provided the students with alternative methods of assessment and learning. This teacher was very aware of the avoidance activities that Scott engaged in, and would not let him get out of completing work because of them. The students were encouraged to write as well as use the computer, and even draw or doodle instead of taking notes. Higher expectations – raising the bar – encouragement and self esteem building were an integral part of this teacher’s classroom (Teacher interview 08/11/08).

A similar situation existed with the high school teacher at the support centre he attended. Scott attended for interaction, support and social development. He found the social skills sessions very challenging but with encouragement he participated and developed socially. Students at this centre usually attended for a limited period of time but the teacher observed the benefits to Scott of attending the school, and advocated for him to attend for the three high school grades that the school catered for. Scott again practised his avoidance activities but the teacher saw them for what they were and provided support for him. Scott was not an easy student and sometimes demonstrated his discomfort by having temper tantrums. His teacher observed that it was obvious when he had not taken his medication because of the difficulties Scott displayed (Teacher interview 09/11/08).

Scott was well liked by the other students at both these schools. He was accepted for who he was (Teacher interviews 08/11/08 & 09/11/08). Scott considers these

teachers his personal friends and still keeps in contact with them and invited them to his 18th birthday which they both attended. He would advise other students that if they find an adult who cares to keep in contact even after they have moved on from school (Written statement dated 03/08/08).

Being bullied at school occurred often for Scott. His method of coping with the bullying was to stay out of the playground; he would borrow a teacher's newspaper and go to the library. From the age of 9 Scott read the newspaper every day. Scott had a quick wit and would use his verbal skills to lash out at his tormentors, both teachers and students (Parent written statement 01/01/08). This did not endear him to his tormentors and in hindsight he notes: *"Try to avoid reacting or being provoked, join all the lunch time activities, volunteer to help in the canteen or go to the library."* He also stated: *"if you are being bullied or have no friends you should remember there will always be a friend for you somewhere"* (Written statement dated 03/08/08).

Stress and anxiety were a constant issue for Scott and he developed various ways of coping with it. When he was younger he would jump on the trampoline or use a swing to relax. As he got older he would draw maps and mazes and later still, design whole shopping centres as well as build whole cities using building bricks (Scott's written statement dated 03/08/08, parent interview 03/08/08). The early years of primary school were such a *"horrible, depressing, stressful time, everything was just so overwhelming at the time"* (Written statement dated 03/08/08), that he has blotted out many of those memories and what he did to cope with the stress and anxiety. As a young adult he would read, listen to music or take a hot bath to cope with the stress.

At all times Scott's parents kept him informed about his disability, the issues associated with it and the different assessments and intervention programs. Scott participated in discussions concerning the various interventions and any assistance or special programs that were implemented. Whilst some teachers were happy for Scott to participate in discussions and negotiations, others were not. *"His maths teacher was particularly hurtful and insensitive to his feelings, telling a room full of departmental officials, that she had just marked his exam paper and he had failed"*

maths and asked, had he thought of doing something else as he was obviously no good at it” (Parent written statement dated 01/01/08). This was his Year 11 teacher. Scott had previously achieved a Level 4 pass and a B grade for his Year ten advanced maths assessment.

Scott found that participating in the discussions about his work and assessment options helped him achieve even though at times he found the discussions difficult. Participation in these discussions provided him with a sense of ownership and made him realise that there were teachers and other professionals willing to help him. As a result, he wanted to please them, and in doing so improved his achievement levels, which then boosted his self confidence. His advice to others is that all students with disabilities should be involved in the planning and decision making about them. *“In order for intervention to work people need to know the student’s perspective and the student needs to support the decisions that are made”* (Written statement dated 03/08/09).

As his confidence grew in the latter years of high school so did his levels of achievement. He received many awards for his achievements in high school and achieved a University Admissions Index (UAI) – the score used in NSW and the ACT to rank students for admission to university – of 84 in his Year 12 exams. This score was high enough to gain him admission to university to study Environmental Science.

Scott decided to take a year off from study after finishing school and worked to save money and to buy a car. He worked in the retail industry and continued to achieve at a high level. *“At work I can organise goods onto the bays – my bays were used as the industry standard in a company manual - and I am always called on to solve tricky storage problems”* (Written statement dated 03/08/09). Scott provided some advice based on his experiences at school for other students who may be coping with similar issues to those he encountered. This list can be found in Appendix G.

9.8 FAMILY EFFECTS

Scott's family have experienced many highs and lows. They have paid a substantial price for having a child who was both gifted and had a severe learning disability. Throughout the experience they have demonstrated courage and belief in themselves, Scott, and the people who have supported them, both professionally and emotionally.

The relationship between the siblings has been affected by Scott's disability and his efforts to cope with its effects. Scott and his older brother were very close during his early years, but as primary school wore on, Scott found the mental and physical strain of coping with school, his disability and the constant intervention therapies, as well as maintaining a relationship with his older sibling very difficult. He began to withdraw from this relationship and isolate himself rather than being part of the family unit in order to focus on the intervention therapies he was undergoing. His older brother found this situation very difficult and missed the close relationship they had once shared. This brother's pain, at his sibling's withdrawal from the relationship at the age of 11, in order to deal with everything that was happening to him, was expressed in a poem written by his older brother (see Appendix G) (Parent interview 03/08/08). It was at this time that Scott's father was also involved in the motor bike accident.

His parents have had to balance their family and working life to provide for the needs and support of their three children. They have had to advocate for Scott and fight many battles to ensure that he was given the opportunities to reach his potential. The occupational therapist and the teachers who supported Scott, all stated that without his parents and their sustained efforts for Scott, he would not have gone as far as he did. They all stated that his parents listened to Scott, advocated for him and pursued the education departments and school to ensure that he received the help he needed (Teacher interviews 08/11/08 & 09/11/08). As a result of their experiences Scott's mother has compiled a list of suggestions for other parents who may find themselves in a similar situation (see Appendix G). Scott demonstrated the personality characteristics and determination that were required, along with the external support in order to achieve his goals.

9.9 CONCLUSION

Scott is currently enrolled at university and is undertaking his studies by distance education. He has a part time job as an environmental officer with the local municipal council. He has obtained his driver's licence and bought his own car. As his job is some distance from home he is even considering moving out and having a place of his own. He is a young man determined to have a bright and fulfilling future.

CHAPTER 10

DISCUSSION

10.1 INTRODUCTION

This study aimed to understand what the barriers are to the identification of gifted students with a learning disability. This group of students falls into three categories: firstly, those who are identified as gifted but whose learning disability is not recognised; secondly, those who are not identified as either gifted or having a learning disability because they are achieving at an average level for their age; and thirdly, those who are identified as having a learning disability but whose giftedness is not recognised (Baum, 1991). As noted in Chapter 2, this group of students is also under-represented in programs for gifted students. In addition, this study endeavoured to understand what strategies were applicable and appropriate in order to identify gifted students with a learning disability.

In this chapter the results of this research are discussed in light of the research questions and the implications for not only the students and their families, but also the teachers, school counsellors and education systems. For ease of reading, the abbreviation GLD will be used instead of the phrase gifted with a learning disability.

10.2 RESEARCH QUESTION 1

1. What are the effects of not being identified as gifted with a learning disability?

Not being identified as GLD has far-reaching consequences which affect not only the child, but also the whole family. Further, it affects relationships not just within the family group but also with, and within, the school environment. This was demonstrated by the loss of the relationship that Scott's older brother had with him and which was described so well in the poem his brother wrote titled *'The Bridge*

Builder'. Mark and Adam changed schools because of the attitude and response of the initial school they attended.

i. What are the academic effects on the student of not being identified as gifted with a learning disability?

Not being identified as GLD can set the stage for underachievement, behavioural problems and even the possibility of dropping out of school. All the students who participated in this research stated that school was a negative experience, boring, not challenging and did not encourage them to think. They were not interested in going to school, often displaying behaviours that would encourage their parents to consider allowing them to stay at home and organising appointments for interventions during school time. These findings corroborated the research of Reis, Neu and McGuire (1997, 2000) that GLD students experienced negative feelings about their schooling. Often the students did not listen in class, instead daydreaming because what was being taught was not worth listening to.

I remember that in Year 8, my son missed some school due to illness and his pastoral care teacher kindly arranged for him to borrow another kid's notebook to "catch up". (No child would have willingly lent his notebook to such a vague forgetful boy...) I was horrified to see that this kid's notebook had 3 or 4 times as many notes as my son's did. I asked my son why he didn't usually take more notes, and he said that he would write down only what interested him...and of course most of his schoolwork didn't...(Online discussion 09/07)

Baum (1988) agreed, finding that gifted students with a learning disability who participated in an enrichment program in which they selected their own area of study improved learning behaviours, time on task and motivation. Similar results have been found by other researchers (Baum, Cooper & Neu, 2001; Baum, Emerick, Herman & Dixon, 1989; Bees, 1998; Weinfeld, Barnes-Robinson, Jeweler & Shevitz, 2002, 2005).

Despite the fact that the teacher interviewees stated that they provided open-ended tasks, as far as the students were concerned this just meant more work. *"I never take that option up because why should I have to do more work"* (Student interview). Instead they preferred to do exactly what was set and what the rest of the class were doing, despite the fact that they found it boring and frustrating, as they felt that was the way to get the best mark. In order to feel intellectually stimulated they would then create for themselves challenges at home, in a field that interested them, and which had meaning for them. Adam noted that he completed tasks as they were set and that he could challenge himself at home and when he left school. This finding was also noted by Reis, et al. (1997, 2000). This behaviour is possibly the beginning of underachievement, a loss of creativity and original thought. Thomas demonstrated this behaviour by refusing to continually show his teachers what he was capable of accomplishing. Mark commented that he enjoyed the school holidays more than school as they were more challenging.

Learning disabilities may be manifested in various cognitive dysfunctions. The case study participants demonstrated learning disabilities in a number of areas affecting academic achievement across all subject areas. Scott was excluded from reading groups as the teacher assumed that because he was unable to write his name, he was not ready to read. Whilst some of the participants demonstrated excellent oral skills, they experienced difficulties when asked to commit their work to paper. Often this meant that they were asked to repeat written tasks, which in turn led to deteriorating output and behaviour. As a result of poor results in spelling, David was told to write his spelling words out 100 times. This confirms research undertaken by Yewchuk (1983), Olenchak (1994) and Reis et al. (1997, 2000) who found that students were likely to be placed in remedial programs that focused on repetition in order to remediate their learning disability. Whilst remediation is necessary in order to help these students develop compensation strategies, it should not be the overriding or main strategy used in programs for gifted students with a learning disability (Baum, 1984; Baum et al. 2001; Bees, 1998; Bisland, 2004; Crawford & Snart, 1994; Neilsen & Mortoff-Albert, 1989; Winebrenner, 2003). Both Emma and Mark were targeted for their learning disability and placed in programs for students with disabilities. Mark had to repeat kindergarten because of his disability and lack of achievement at an age-appropriate level.

ii. What are the socio-emotional effects of not being identified as gifted with a learning disability?

From an early age, gifted children with a learning disability are aware that they are different from their age peers. In some areas they are performing above their age peers but in others struggling to keep up. This contradiction fosters confusion, low self-esteem and self-doubt in these students (Baum, 1990; Barton & Starnes, 1989; Brody & Mills, 1997; Silverman, 1989; Whitmore, 1985). As a result they often isolated themselves from their age peers and lacked friends in the school arena such as Scott who spent his lunch times in the school library. David also lacked friends during his primary school years. This finding supports the research conclusions of Waldron, Saphire and Rosenblum (1987) that GLD students demonstrated ‘*asocial*’ behaviours and were not accepted by their peers. These students are often bullied by their classmates, both physically and verbally. Sometimes the gifted child with the learning disability became the bully, even if only verbally. Scott was physically bullied by his classmates and dragged from the classroom and rolled in the dirt. He also used his intellect to retaliate verbally against the other students and his teachers. This finding supported that of Reis et al (1997, 2000).

Confusion and a lack of understanding about their abilities and disabilities meant that these students felt they were stupid and worthless, and talked about suicide and feelings of not wanting to live. All of the GLD participants in this research have undergone some form of psychological counselling for conditions such as anxiety disorder and stress-related physical illnesses. David was bullied so severely and suffered such extreme anxiety that the school he attended applied for, and received funding in order to support him, and help him cope with the anxiety he experienced. On several occasions Scott talked about suicide and attended counselling throughout his schooling. Bees (1998) reported similar findings including depression.

At the moment I am still not sure what to do as he is also suffering quite bad (to me) depression – weeping quite a lot and not enjoying things he usually

does. We had the family staying close to us for the holidays and he is very close to his cousins. He really enjoyed being with them but as the days passed he started getting depressed because they would be leaving soon and he would have to go back to school. There was one night where he cried himself to sleep. Have any of you had depressed kids who have been treated with medication? I feel like Joe needs something in order to give him some help while he works through the issues with school and bullying. (Online discussion 04/09)

Dole (2000) noted that counselling can help GLD students recognise their strengths and weaknesses and learn to set realistic goals. Research has recommended some form of intervention to address the social and emotional issues experienced by these students (Baum, 1984; Bees, 1998; Brody & Mills, 1997, 1999; Hishinuma & Nishimura, 2000; King, 2005; Maker & Udall, 1997; Reis et al. 2000; Whitmore, 1985).

GLD students demonstrated difficulty in social situations, failed to develop friendships at school and lacked support by the schools. Students felt physically sick at the thought of having to attend school. Emma took her temperature each morning hoping to find that she had a fever and would therefore be able to stay home from school. David described going to school as like a ‘*nuclear bomb*’ going off in his stomach. They may have demonstrated high anxiety at school but away from the school environment were happy, stress-free children. When participating in activities outside school both Thomas and David demonstrated enthusiasm for learning. This finding agrees with Dole (2000) and Reis et al. (2000) who found that students who participated in activities outside school experienced positive outcomes.

The anxiety and stress these students experienced often manifested in inappropriate behaviours within the classroom and the school. As a result these students were often ‘*punished*’ by the teacher through being excluded from the classroom and sent elsewhere. For these students this was a relief, as it removed them from the stressful situation they were experiencing and provided them with ‘*time out*’ to regroup and be able to face returning to the classroom environment. Thomas was on permanent

detention, spending many hours outside the principal's office, and even being sent to the kindergarten classroom for behaving like a baby. He enjoyed this time as he could interact and help with the kindergarten students. Adam also spent time outside the classroom as a form of punishment. He found these banishments helped him return to the classroom and cope with the classroom situation. Silverman (1989) recommended a quiet space for these students, and Neilsen and Higgins (2005) suggested a *'safe haven within the eye of the educational storm'* (p. 15).

Outside of the school environment, through extra-curricular activities these students often found like minds with whom they could share and connect. These activities had been sourced through support groups to which the parents belonged, and which provided a range of activities for the children to participate in. All the case study participants' parents discovered that if they wanted to ignite the learning spark again in their children then they had to provide the opportunity to do so. As a result they actively sought out activities such as camps for gifted students, science, art and various other workshops. These activities provided opportunities for not only the children to meet like minds, but also for the parents to meet other parents who had experienced similar difficulties. The parents shared and discussed at these functions what they had learnt, and asked questions of each other. They were all looking for ways to help identify their children's disabilities, and source information about strategies and resources that recognised their child's giftedness and helped them develop compensation strategies for their disabilities. Similarly, research has noted that activities outside the school environment provided students with opportunities to excel. It has also been reported that parents fought for, and sourced additional opportunities for their children which increased their children's self-confidence (Neilsen & Higgins, 2005; Reis et al. 1997). Some of the questions that parents in the current study asked were:

Does anyone have any suggestions for suitable games and educational programs for my 7 year old son in year 2? He is very visual spatial and LOVES the computer – and HATES times tables and written homework... He has enjoyed the Reader rabbit programs but outgrown them.

I hear Mathletics is good value – has anyone tried it? What about other programs? I am REALLY wary of too much computer time and violent games are a No-no. What has worked for your kid/s? His special interests are space, rockets, science type stuff, and the Titanic. He LOVES Deltora Quest and is just getting into Goosebumps. (Online discussion 11/07)

These support groups consisted of face-to-face meetings and an online chat forum. It was as a result of these discussions and meetings that the parents sourced professionals to consult, resources to access, and discussed the benefits of various interventions. The strategy of accessing resources online has been suggested in previous research by Cline and Hegeman (2001). The online discussion group consisted of mothers who had a wide range of professional experience in a variety of fields. They supported each other and had a large repertoire of knowledge about gifted education, gifted students with learning disabilities, professionals to consult, special provisions for school and various intervention programs. Questions about resources and members' experiences were often posted on the discussion group.

I was wondering if anyone in the group has used FastForWord or Earobics and believe they had a definite benefit on their child's APD...???

Just wondering if anyone could point me to a beginners guide to Central Auditory Processing Disorder (+ particularly CAPD in gifted children). Number two son (in Yr 1) has just received a preliminary diagnosis & I'm looking for a starting point to find out what I can. We are having more tests done next week. (Online discussion 08/07)

iii. What are the effects on the family of a child not being identified as gifted with a learning disability?

All the participants in this research study were identified by their parents - not by the school - as being GLD. The survey results demonstrated that teachers were ambivalent about students with learning disabilities although they indicated some confidence to be able to identify them, they did not feel confident adapting lessons and individualising instruction for them. The identification process was undertaken

as a result of behaviours or issues that arose as the participants progressed through their schooling. Adam was displaying temper tantrums in the classroom, Thomas was spending more time out of the classroom than in it because of his defiant behaviour, and David and Mark were not progressing at the same pace as their peers. In each case the initiative was taken by the parent to instigate some form of assessment in order to understand why the behaviour was being exhibited.

In some cases the issue was raised by the school and minimal assessment undertaken by the school, but in most cases the parents sourced, and paid for external assessments and interventions. The lack of decisive action by any of the teachers is supported by the results of the survey which indicated that teachers were ambivalent about students with learning disabilities. It also supported the findings of the teacher interviews that responsibility for students with learning disabilities belonged to a specialist in the field and not the regular classroom teacher. This has meant that considerable time and resources within a family have been focused on one child. If there were other children in the family it has meant that a conscious effort has had to be made to ensure that the other children have special time with their parents. This can mean considerable balancing of commitments by parents and families.

In order to identify a child as GLD more than one assessment is required. Research has established that more than one method should be used when identifying not only students who are GLD, but also gifted students more generally (Baum, 1984; Gundersen, Maesch & Rees, 1987; McCoach, Kehle, Bray & Diegle, 2001; Silverman, 1989; Suter & Wolf, 1987). Often this involved an IQ assessment, in addition to assessments by professionals, such as occupational therapists, speech therapists, physiotherapists, optometrists and paediatricians. Consulting these professionals involved considerable time and money, and often as a result of these assessments, interventions were recommended to help the child improve their skills in their area or areas of disability. All case study participants undertook some form of intervention for a period of time.

The time spent undertaking these assessments and interventions may have had a positive effect on the relationship between the parents and the child as they

interacted during the time spent together. Both of Adam's and Mark's parents commented that they planned and spent time participating in activities as a family unit. They considered this a positive effect of having children with learning disabilities. On the other hand it can also have a negative effect as the child develops resentment at the time they have to spend undertaking these assessments and interventions, rather than being able to do what they would prefer, and in which they had an interest. Emma noted that she would rather do other things than continually attend assessments and intervention programs with her parents.

As a result of the assessments and interventions, the child may perceive that they only have a disability and not that they are also gifted. This can lead to low self-esteem, self-doubt and poor self-efficacy. With continual assessments being undertaken Emma was left with the impression that she had only disabilities and was not gifted in any respect. The parent/child relationship can also be affected as the parents come to terms with the fact that their child is not only gifted, but also has a learning disability, and the reverse – that their child has a disability, but they are not aware that their child is also gifted. Both Thomas's and Emma's mothers did not initially consider that their children were gifted. It was only after testing that they were made aware that they were also gifted. Parents may also feel guilt as they had been aware that their child was more intelligent than other children, but achievement levels had not been as anticipated. They thought initially like the school, that their child was just lazy or would eventually catch up with their peers. David's mother initially agreed with the teachers and thought that he was slow to develop and would eventually catch up with his peers. The possibility and belief that a child is just not trying hard enough when in fact they have a disability has been highlighted by Reis et al (2000) and Rice (2002) and is a common belief amongst parents and educational professionals. Emma's father had this attitude, noting that he thought he was lazy and in order to achieve had to work hard to counteract the laziness and inevitably this level of effort became too difficult to maintain.

Families with a child who was GLD felt that they had to compensate at home for a lack of an appropriate education at school. This has meant that family activities needed to be planned with not only the other family members being considered but

also appropriate activities for the child who had the learning disability. Providing the children with an activity at which they excelled, and which was different from one in which their siblings participated, may have improved self-esteem and provided an activity that was unique to them. Scott was enrolled in gymnastics and riding for the disabled which provided him with opportunities to succeed, and achievements to boast about. Thomas attended out-of-school programs which his mother noted gave him enthusiasm for learning. When providing appropriate educational experiences for students who are GLD the opportunity to experience success outside the school environment has been credited with increasing a child's self-esteem and self-efficacy. This finding confirmed the research by Reis et al. (1997, 2000) who found that the research subjects had positive out-of-school experiences which helped them adapt to the negative school experiences and provided them with opportunities to excel. These opportunities encouraged the child to develop compensatory strategies in order to overcome any effects the disability may have had whilst achieving their goal.

Relationships between parents were affected as they struggled to meet the needs of their children. When discussing the possible assessments and interventions for Emma, her parents appeared to disagree, with her father noting that there were too many of them and he did not like having to go to them with Emma. The mothers of the participants in this research were part of a support group that conducted face-to-face meetings as well as an online discussion forum. In all the case studies it was the mother who initiated investigations into their child's issues. Thomas's mother did not have the support of a partner and at times found it difficult to cope on her own. Many of the mothers discussed the father's reluctance or inability to accept that their child had a learning disability. This reluctance occurred despite the fact that their child's disability was identified and interventions were available which could improve, and/or provide compensation strategies for their children. Most fathers eventually accepted that their child had a problem and became involved, but only after a considerable period of time. *"He is actually very much on board now after changing the way he thinks but he needed to come to it in his own time"* (Online discussion 04/09). From early in the process, Adam's and Mark's father worked in partnership with their mother, sharing the decisions. David's father took a lot longer to recognise that he could help and support David and his mother. A

partnership existed from the beginning for Scott with his father ensuring that his siblings were not neglected as help was sought for Scott.

This finding is supported by Reis et al. (1997, 2000) who noted that the mothers were the primary advocates, with some fathers eventually contributing. They observed that it was the mothers who supervised the homework, argued with the school about appropriate strategies for their children, took them to the testing and constantly provided encouragement and love. Dole (2000) also found that parents who provided emotional support and fostered self-esteem were the main factors in encouraging resilience in their children. Additionally, Baldwin and Vialle (1999) suggested that families should provide emotional and cognitive support to their children, and that parents were the best advocates in ensuring that a gifted child with a learning disability received an appropriate education.

Two fathers, though, found the experience of helping their child enlightening as it developed awareness that they had the same issues as their child. Adam and Mark's father found the experience of working with and supporting his sons very positive as he recognised the similarities between himself and his sons. As a result he changed the way he operated in his professional life and has since received accolades from his work colleagues. This had real positive benefits for both the family and his work. Emma's father, although he recognised that Emma displayed similar traits to his own, felt powerless to help her. His attitude was that you could not change your innate self and there was little point in trying, as it took considerable effort to change and the effort eventually became too much.

Parents of GLD students considered that the behaviours their children demonstrated were because the children were gifted with a learning disability, and not because all children may experience similar developmental stages.

When they start at school gifted learning disabled kids often ask "why are we learning this?" which teachers don't, can't, or won't, usually answer because time doesn't allow for a philosophical discussion. As one answer often leads to another "why?" anyway. But gifted need these questions to be

answered to get the motivation they need to apply themselves. And GLDers need it a 100 times moreso! (Online discussion April 09)

The expectations by the parents of the teachers in the classroom may be excessive and unrealistic. A young child is not going to be interested in which professions require knowledge about categorising.

*Perhaps if someone took the time to say to the little child (and the whole class) we are categorising as a means of transport today not so much to learn about transport, as to learn about how to **categorise** things. This will be useful to you in later life. For example, lawyers need to be able to categorise all the defences to murder, and architects need to be able to categorise xxx and astronauts need to be able to categorise yyy etc. (Online discussion group)*

The parents of the participants in this research felt they had little or no support from their children's individual schools. The schools Emma attended were disbelieving of the fact that she was gifted. When the school was asked to provide an appropriate program for Adam and Mark their response was that there needed to be improvement in Adam's behaviour before anything different would be implemented. As a result of the school's lack of ability to respond appropriately Mark was made to repeat kindergarten. Scott also spent time playing outside the classroom as the teacher assumed he was not cognitively able to progress because of his disability. This was despite the parents informing the school of his difficulties and provisions that could be put in place to support him. This made for antagonistic relationships between families and schools. Research has shown that providing appropriate programs for GLD students eases tensions between the school and families (Moon, 1995).

Results from the teacher interviews, though, suggested that teachers wanted to help these students but they felt unsupported by school executive and hampered by a lack of knowledge about GLD students. One teacher commented that a parent approached the school in a confrontational and critical way rather in a cooperative manner.

10.3 RESEARCH QUESTION 2

2. What factors are contributing to non-identification of gifted students with a learning disability?

GLD students are being identified by their parents, but not by the schools. This is due to many factors, including teachers' lack of knowledge of this group of students, their inability to meet these students' needs in the regular classroom, the substantial demands and workloads of the teachers, the lack of professional development, undergraduate training and support for teachers within the education systems. A couple of teacher interviewees noted that they would like to learn more from a professional about GLD students and strategies they could use in the classroom to meet their educational needs. One teacher also noted that support from school executive was important in order to provide for these students in the classroom.

i. What are teachers' and school counsellors' attitudes to and knowledge of gifted students with a learning disability?

Teachers and school counsellors have knowledge of and a positive attitude towards gifted students as demonstrated by the results of the surveys and the information provided by the teachers interviewed. These findings contrasted with those of Chipeco (2004) and McCoach and Siegle (2005), who found that teachers' attitudes to gifted students were ambivalent, and that there was a statistically significant difference between the attitudes of special education teachers and non-special education teachers towards the gifted. McCoach and Siegle (2005) noted, however, that there was wide variability amongst the teachers, with some having very positive attitudes towards gifted education whilst others had very negative attitudes. They cautioned against assuming that all teachers have a specific attitude but rather suggested that teachers' attitudes be assessed on an individual basis. Peirce and Adams (undated), though, found that pre-service and experienced teachers generally had a positive attitude towards diverse learners, and in particular gifted students. This finding has also been supported in other research (Lewis & Milton,

2005; Megay-Nespoli, 2001; Tomlinson, Callahan, Moon, Tomchin, Landrum, Imbeau, Hunsaker & Eiss, 1995).

The teachers in this research study demonstrated that they had minimal knowledge of students with learning disabilities and were ambivalent in their attitudes towards these students. Additionally, they considered that they were meeting the needs of gifted students in the classroom, but that it was not the responsibility of the classroom teacher to cater to the needs of the students with learning disabilities. This was expected to be the domain of specialist teachers. As a result it is unlikely that teachers would consider the possibility that a student who has been identified as having a learning disability could also be gifted. Their understanding is that the student would be catered for by the specialist teacher and not the regular classroom teacher. Research has found that few GLD students were being identified and it has been hypothesised that this was due to a lack of knowledge about these students (Karnes, Shaunessy & Bisland, 2004). Despite the fact that teachers were not identifying GLD students, they were aware that they existed in their classrooms and expressed a desire to learn more about them. This finding supports research that noted teachers were asking for help in identifying GLD students and that teachers had an appropriate understanding of gifted students (Boodoo et al, 1989; Guskin, Peng & Majd-Jabbari, 1988).

Teacher interviewees understood what the characteristics of gifted students were, and believed that they were identifying them, and meeting their needs in the classroom. In contrast they could only identify students with learning disabilities if they were obvious disabilities such as a physical disability or a confirmed diagnosis of Autism or Asperger's syndrome. Additionally, they considered students who were ESL (English as a second language) learners as having a disability. Teachers also recognised organisational or reading difficulties as learning disabilities. They did not demonstrate an awareness of audio or visual processing difficulties and fine or gross motor difficulties, and the effect they may have had on a student's learning. Adam, Mark and David demonstrated fine and gross motor skill deficiencies which impacted on their learning, especially in the area of handwriting. This was not recognised by the teachers despite the parents informing the school, and providing suggestions from the occupational therapists for strategies to

compensate for this disability. However, teachers did recognise that Emma and David had reading difficulties and needed remediation in these areas.

Teachers' lack of knowledge and sense of responsibility about students with a learning disability indicated that their chances of being able to identify a student who not only had a learning disability but was also gifted would be minimal. Such was the case with four of the children in this study. It was interesting to note that the teacher interviewees realised that they should be doing more for gifted and GLD students but they felt completely overwhelmed by the demands on them, and the lack of support from both the school executive and the education systems. This supports the findings of Boodoo et al (1989) that teachers were asking for help in identifying gifted students with a learning disability. If provided with the opportunity to learn more about these students from professionals who had expertise in the field and not just a staff member who had had some training, they would accept the opportunity willingly. *"I feel I don't know enough about how to deal with the child that's underachieving when they have such a high IQ, I don't know enough about it, all schools need to know where to access expert help"* (Teacher interview).

ii. What awareness did educators have of gifted students with a learning disability?

The results from the teacher interviewees demonstrated that they do accept that students who are gifted and also have a learning disability exist in schools. Their ability to identify them is dependent on someone else's expertise and the classroom teacher being provided with an official diagnosis prior to the student being placed in the class. The parents of each of the case study participants provided the schools with documentation that outlined their children's disabilities, compensation strategies and their giftedness. Despite this, the majority of schools chose to ignore this information, and in Emma's case even questioned the validity of the information. One group of students they identified and considered as having a learning disability were ESL students. In addition to these students they would identify a student who had a literacy or organisational problem as having a learning disability. If the student had a gross or fine motor disability which affected their

ability to either sit still in class, or produce neatly written work or had a processing disability, either visual or auditory, they would be unable to make the link, and therefore be unable to provide an appropriate educational program for the student. Boodoo et al (1989) hypothesised that teachers may have had a lack of awareness about gifted students with a learning disability or that they are a low priority in schools.

Gundersen et al. (1987) noted that if special education teachers observed specific strengths they would not provide appropriate tasks for these strengths but rather considered how the strength could negate the disabilities. Minner (1990) found that teachers were less likely to refer a disabled child for a gifted program than a similarly described non-disabled student. Mark was recognised and targeted only for his disability and thus repeated a year at school.

Despite this lack of knowledge and ability to meet these students' needs, the teachers were willing to learn, and with appropriate support from school executive, education systems and appropriate training, provide for these students in the regular classroom. One teacher interviewee stated that teachers needed the backing of head teachers and the principal in order to support teachers in the classroom. Another teacher commented that they would like to learn more, but felt that the demands of the school curriculum meant that they were stretched to their limit. Scott's teacher had training in gifted education and was aware that GLD students existed. She recognised that Scott had disabilities and that he was gifted. She was able to provide him with a program that acknowledged his giftedness as well as provide compensation strategies for his disabilities. As a result she was able to provide a program that catered for his giftedness as well as his disabilities. Current research supports this finding and suggests that further training of teachers is required in order for gifted students with a learning disability to be identified and provided with appropriate education programs (Baldwin & Vialle, 1999; Bees, 1998; Reis et al. 1997, 2000; Weinfeld et al, 2005). Results from the ANOVA supported this finding with a statistical significance for teacher training in gifted education. One teacher interviewee commented, "*I probably don't know enough about it. I've done a mini certificate but we really didn't go into a lot of detail*" (Teacher interview).

iii. How is gifted with a learning disability defined by schools, classroom teachers and parents?

The teacher interviewees in Phase 1 were unaware of the information contained in their school's gifted education policy document and, as a result, would not have knowledge of whether GLD students were included, or how they were defined. This lack of knowledge was disappointing when all schools have copies of the NSW DET document "*Policy and implementation strategies for the education of gifted and talented students*" (2004), in which GLD students are explicitly defined and strategies for identifying and catering to their educational needs are outlined.

Parents, on the other hand, were very well informed about the characteristics and needs of students who were GLD. They were acutely aware of the discrepancies their children exhibited in their abilities and achievements. David demonstrated advanced ability and insight before starting school yet his mother was aware that he also had difficulty in reading. The parents had an understanding of what their children accomplished and what they had difficulty completing. They saw the frustration that their children experienced as they came to terms with their abilities and disability. Scott was able to build whole worlds with building blocks and was verbally precocious, yet could not complete the task of dressing himself.

In Phase 2 it was noted that the parents educated themselves about giftedness and also had substantial knowledge about the disabilities their children exhibited. The support group that the parents attended provided guest speakers with expertise in a specific area such as auditory processing difficulties, and other areas related to students with disabilities who were also gifted. These meetings provided parents with an opportunity to ask questions and gain additional information in a social setting. They amassed a formidable amount of information and when communicating this knowledge may sometimes have overwhelmed the classroom teacher. Emma underwent a substantial number of assessments and her mother was keen to provide the school with the results. This led to the teachers being provided with a large amount of data that they found difficult to comprehend, and as a result the mother commented that it usually just went into the bottom of the school filing cabinet. Thomas' mother experienced a similar situation when the

teacher was presented with an Individual Educational Program (IEP) that was designed specifically for him.

I have been thinking of making up a package for each of his new subject teachers, so that I don't make the fatal mistake of assuming that all the teachers will read his file. If I put together all of his assessments, plus some info on the GLD issue, and that fabulous article that someone posted I am sure that there would be over 30 pages and no-one would read it. (Online discussion 01/07)

Parents of the case study participants were willing to share the information they had amassed with the schools and would like to have worked in a cooperative manner with their children's classroom teachers. Mark and Adam's teachers were provided with information about their abilities, and were also offered support and strategies. It was not until they changed schools that the appropriate recognition was provided and suitable educational programs put in place by the principal. This principal was willing to listen to the parents and was happy to work cooperatively with them. She demonstrated an understanding of the special needs of these students.

Defining GLD is a difficult concept as there are a range of different disabilities which affect students in many ways and to different degrees. Thomas demonstrated difficulty integrating his visual and motor systems which impacted significantly on his written work and his ability to read. Auditory processing difficulties to different degrees of severity were experienced by both Adam and Mark affecting their ability to understand verbal instructions. In addition Adam displayed visual and fine motor difficulties. Mark also displayed fine and gross motor difficulties to a greater degree of severity than Adam. Emma was initially considered to have a learning disability that affected her ability to read. Her IQ results provided conflicting results as did many of the other assessments, making it difficult to identify the main areas of concern. For Emma, addressing her inability to read at a level commensurate with her ability was important in order for her to progress in her learning. David created some real confusion for his parents, demonstrating superior abilities and understanding prior to starting school but then demonstrating difficulty with handwriting, reading and other fine and gross motor skills. Scott's dyspraxia

affected not only his schooling, but all facets of his life from performing everyday functions such as eating and dressing to planning how to execute a specific task.

A definition needs to consider the various forms of disabilities as well as defining giftedness. Schools and education systems have established definitions for giftedness and learning disabilities but it was less common to have a definition that described a student who was both gifted and had a learning disability. None of the teacher interviewees in Phase 1 had knowledge of whether a definition for GLD existed in their school's policy on gifted education and could not identify them. The concept of a discrepancy between potential and performance is often the basis for identification, and hence defining gifted with a learning disability (Baum, 1988; Dix & Schafer, 1996; Hishinuma & Tadaki 1998). Additionally a lack of clarity of what constitutes a discrepancy exacerbates this problem. One of Scott's teachers in primary school was very aware of his potential and had great difficulty reconciling his obvious potential with what he actually achieved. This can be difficult as the giftedness often masks the disability, and the student is performing at an average level (Brody & Mills 1997). Adam performed at an average level at school so that his teacher was not aware that he was either gifted or had a learning disability. It was the demonstration of his frustration in the classroom that led to further investigations. A consensus needs to be achieved about what constitutes GLD.

10.4 RESEARCH QUESTION 3

3. What processes can be put in place to enable identification of gifted students with a learning disability?

Identification of gifted students with a learning disability requires the cooperation of schools, teachers and school counsellors working with parents and the professionals who administer the diagnostic assessments and recommend intervention programs. The teachers, school counsellors, coordinators and specialist teachers also need support from school executives and education systems along with professional training in identifying and meeting these students' educational needs. Defining this population of students requires a combination of the definition

of giftedness, as well as learning disabilities. This can only be achieved through the special education and gifted groups working together.

A range of assessments was undertaken by each of the case study participants. The assessments were administered by various professionals:

- IQ and cognitive assessments by registered psychologists and school counsellors;
- Fine and gross motor skills in addition to motor processing by occupational therapists;
- Vision and visual processing by behavioural optometrists; and,
- Reading, spelling and other academic assessments by school counsellors and educational consultants.

In addition to the assessments, each of these professionals recommended intervention programs to provide remediation and strategies for overcoming their disability (see Appendix H for descriptions of the assessments and interventions). The case study participants provided the schools their children attended with reports from the various specialists. These reports clearly outlined the students' disabilities and possible compensation strategies that could have been implemented in the classroom. Teachers, though, are not trained to understand these reports and for them to be useful they need to be provided in a format that the teachers understand if they are to implement the recommendations. Alternatively the school counsellor could liaise with the professionals and the teachers to establish an understanding of the information that is presented.

i. How have students been identified as gifted with a learning disability?

All of the case study participants in this research were identified as GLD through the efforts of their parents and at the parents' expense, and not by the schools. After their child had been diagnosed with a learning disability, parents had notified their child's school and advocated for provisions to enable them to reach their academic potential. Many teachers had been disbelieving, and as the children had high IQs they often did not qualify for the school to receive financial assistance in order to

provide additional aides and resources in the classroom. Mark's teacher commented that he was actually quite ordinary and couldn't possibly be gifted. One of the teachers at Emma's school questioned the authenticity of one of the psychologist's IQ reports. Despite receiving a disability pension Scott was ineligible for any special school funding because of his IQ score.

Assessments to identify a child's disability have been undertaken by psychologists, paediatricians, occupational therapists, physiotherapists, speech therapists, educational consultants, optometrists and school counsellors. The assessments have consisted of IQ testing, hearing and visual assessments, auditory and visual processing assessments and assessments of fine and gross motor skills. Research supports the need for more than one method of identification. Whilst using multiple methods of identification is important, it was not necessary for Emma to be subjected to the multiple assessments that she undertook. The initial assessments provided the information that she was gifted but also had a learning disability. The continual process of assessments only served to undermine her self-confidence and provided confusing and conflicting results for which a possible cause was not suggested.

Researchers have identified students with learning disabilities using a number of criteria such as IQ assessments, a lack of academic achievement, identified learning disabilities requiring support and sub-tests to identify students' disabilities as well as strengths and observations (Boodoo et al, 1989; Neilsen & Mortoff-Albert, 1989; Weinfeld, et al, 2002). Within the current literature, some of which is descriptive rather than empirical research, recommendations are made for identification protocols (Baum & Owen, 1988; Baum et al. 1988; Dix & Schafer, 1996; Munro, 2002; Nielsen & Higgins, 2005).

As a result of the assessments, discrepancies were observed, usually with respect to the child's IQ in addition to their actual achievements in the classroom and at home. This confirmed similar findings in the literature (Barton & Starnes, 1989; Baum & Owen, 1988; Bees, 1998; Reis et al. 1997; Silverman, 1989). In some cases it had been the range of sub-test scores demonstrated on an IQ test that had highlighted the necessity for further investigation. For all cases, the initial

assessment was an IQ test. The results of the IQ test then provided direction for further assessment. Financial cost for administration of these assessments has been borne by the families. If a family cannot afford the assessments they can go onto a waiting list for public health departments to administer them. Financial reasons are one of the exclusions for defining a disability. A lack of financial support though can either mean that a child is not assessed or has to go onto a public waiting list. It can also mean the child does not participate in a recommended intervention. Thomas's mother could not afford some assessments and interventions and as a result waited several months on a public health department waiting list. In addition, interventions have been recommended for all the case study participants at substantial time and financial cost to the parents.

Research has suggested that students be provided with remediation but not as the main focus of their educational program, but rather as a means to develop compensatory strategies (Bisland, 2004; Crawford & Stern, 1994; Reis et al. 2000). At various times in his schooling, Scott was provided with assistance to overcome his disability. At the same time he was not allowed to use his disability as an excuse and participated in programs to remediate some of his weak areas. In primary school he was taught touch typing and allowed to use a computer in the classroom. Although typing requires motor planning for Scott it was still an improvement over his handwriting. Some teachers in his senior years adapted and provided scaffolds for his assessment tasks taking into account his disabilities. These same teachers found the adaptations useful for all students. Mark and Emma, though, were not taught compensation strategies and instead were placed in remedial programs.

Not all recommended interventions were undertaken as cost was a factor in addition to a belief by the parents that the interventions were not always beneficial. If cost was a factor it meant that some students who may have benefited from a specific intervention have not had the opportunity to do so. Scott was able to access many interventions as his parents received a disability pension for him. Thomas' mother had to go on a public waiting list in order to access an intervention for him as she was unable to pay for it to be undertaken in private practice. Emma's parents were forced to take her out of the private school she was attending and place her in a public school in order to be able to access an intervention program.

Perhaps the parents who discontinued the interventions as they could not see the benefits did so because they did not understand the purpose of the interventions, and what was hoped would be achieved by them. Emma's mother discontinued some intervention programs as she did not understand them or their purpose, and could not see any tangible results or benefits for Emma. Mark's parents did not follow through on the suggestion that he undertake another course of sound therapy as they felt the maximum gains had already been achieved. On the other hand parents may have had unrealistic expectations and were even hoping for a 'cure' rather than improvements and strategies to overcome the disabilities. Emma's mother was continually subjecting her to assessments and various interventions and may have been seeking a cure for Emma rather than helping her develop compensation strategies for her disability and enhancing her giftedness.

ii. What strategies have worked in identifying gifted students with a learning disability?

Knowledge of giftedness as well as learning disabilities fosters recognition of GLD students. Without an understanding of both ends of the spectrum, teachers are unlikely to be able to identify a student who is both. In addition, an understanding and awareness of the avoidance strategies that these students employ in the classroom provides an indication that a student is struggling in some aspects of their learning. Parents can often provide the teachers with information about these avoidance strategies. Scott himself was open about the avoidance activities he employed throughout his schooling. His primary teacher who had post graduate qualifications in gifted education was aware that Scott was employing tactics that would mask his disability. Being aware of this meant that Scott was supported and encouraged to use his giftedness to overcome his disabilities. David also employed avoidance strategies from a very early age and told his teachers when they could not read his writing that he wrote in '*African underwater writing*' in order to distract the teacher from the fact that he was having difficulty writing. As none of the earlier teachers had training in gifted education they were unable to recognise these tactics for what they were and therefore suggest interventions or strategies to compensate for the disability.

Recognition of a discrepancy in what a student seems to know and understand, and what they achieve in the classroom is a signal that further investigation is required. David's inability to read at an appropriate age level in his early years of schooling despite his obvious verbal precocity signalled to his parents that something was not quite right, and they took steps to understand why he was struggling. Similarly it was Emma's inability to read that began the process of assessment and intervention. Discussion with the family would provide information about whether a discrepancy had been observed at home and to what extent. Thomas's mother was seeing an entirely different child at home to the one the school described in his Year one report. Undertaking an IQ assessment identifies whether a student is gifted or not, and provides information about possible difficulties in some areas as a result of the demonstrated range of sub-test scores - from below average to the ceiling - on the various IQ sub-tests.

10.5 EMERGING THEMES

10.5.1 Partnerships

Students and schools, parent and child, parents and schools, parents and health professionals and schools and health professionals are all partnerships that are required in order to effectively meet the educational needs of a student who is GLD. All these stakeholders have valuable knowledge and information for ensuring the best possible educational outcome for GLD students. Currently each of the different stakeholders acts independently, and without consultation with the others. In Scott's case some effective communication was achieved between the physiotherapist and the swimming teacher, the riding for the disabled teacher and the specialist gymnastics teacher. This led to the cooperation and shared knowledge between the various stakeholders, which meant that a balanced program was implemented taking into account each of the different aspects of Scott's physical development. In addition the psychologist that Scott consulted provided scaffolding for him to empower him to negotiate with his teachers. This ensured a more cohesive and comprehensive approach to the organisation of his educational

program. This communication and cooperation was only possible through the efforts of his mother, who acted as a coordinator and advocate.

The initial school experiences of Thomas, Adam, Mark and Emma were negative with little support or recognition by the teachers, which led to a feeling of dissatisfaction by the parents with the schools. A change of school for Adam and Mark resulted in a more positive experience for them and their parents. David was supported in high school as a result of the school counsellor working with his various teachers to ensure that he received an appropriate educational program. His mother noted what a difference this support made, not only to David but also to her attitude towards the school. Thomas's mother initially had negative experiences with his school but with persistence the school has implemented a program for gifted students. This change of attitude towards schools as a result of recognition and support for the student is confirmed by Moon (1995) who noted that positive connections between school and home encouraged talent development in young children. Additionally positive feelings about the program reversed some of the adversarial feelings the families had towards the school. Research by Sah and Borland (1989) also noted the behavioural benefits as a result of cooperation between the school and home when a plan was implemented in cooperation with the school. Hishinuma and Nishimura (2000), in researching parent attitudes to specialist programs for GLD students, found that the parents had positive attitudes towards the school and the implemented programs.

Emma was subjected to many assessments and interventions. As a result of a lack of consultation between the different professionals, Emma was forced to participate in many programs in addition to attending school. One program required her to receive intensive training for four hours a day for six weeks with no suggestion that perhaps this training could take place instead of her attending school. She also had a private tutor for a period of time. In addition to these interventions Emma undertook speech therapy with different speech therapists that all provided different programs. Participating in many different interventions did not improve Emma's overall performance or score on follow-up assessments.

Communication and cooperation between the various stakeholders may lead to increased knowledge and information being shared, and additionally a relevant support network being established for those personnel involved. Current literature recommends that special education teachers and teachers of the gifted work together to gain knowledge of the characteristics and needs of the two populations in order to recognise the students who demonstrated characteristics of both. In all of the case studies except Scott, any support or understanding was provided by the school counsellor. The special needs teachers were not involved. Scott received support from a specialist teacher when he attended a specialist school from Years 8 to 10.

10.5.2 Knowledge Acquisition

Both parents and teachers who participated in this research lamented the lack of knowledge about GLD students not only within education systems but also at teacher training institutions. This supported the findings of Bees (1998) and Weinfeld et al (2005) who stated that an important aspect in the implementation of educational programs for GLD students is appropriate, comprehensive and ongoing training of the staff involved. Whilst parents educated themselves and sourced information and resources, the teachers felt that the demands of their job did not allow for additional research in order to gain knowledge about this group of students.

As a result of a lack of knowledge by the teacher about gifted education Mark was forced to repeat Kindergarten instead of being provided with an appropriate educational program. Thomas spent more time outside the classroom being “*punished*” as his teacher did not understand the reasons for his behaviour. Scott was excluded from reading groups because his teacher was not aware that a child could be gifted but also have a disability. Teachers and parents expressed concern about the lack of training for teachers, not only in educating gifted students with learning disabilities but also in educating gifted students more generally. As noted in the results of the survey there was a statistical significance with respect to formal training of teachers in gifted education. Despite this significance, training at the pre-service level for teachers in learning disabilities occurred more frequently as

demonstrated by the survey, than for gifted students. This lack of knowledge was supported by the teachers not considering that they had any confidence in identifying gifted students and adapting and individualising instruction for gifted and learning disabled students.

The teacher interviewees expressed a willingness to learn more, but needed to be given the time to do so and also wanted to learn from 'experts' in the field and not just another staff member who had had some training in gifted education or a parent providing piecemeal information relevant to an individual child. This finding supported the recommendations in the literature for not only general classroom teachers to be trained in providing for GLD students but also specialist teachers and other professionals involved in the management of students with learning disabilities. Scott's Year five teacher had post graduate qualifications in gifted education and as a result ensured that the program implemented considered not only his giftedness but also his disabilities. When Adam and Mark changed schools the educational program and class placement that was suggested to the parents, demonstrated that the principal had knowledge about gifted education. For David the school counsellor at his high school had knowledge about gifted students, and the teachers were prepared to work with the counsellor in ensuring that he received an appropriate educational program.

10.6 RECOMMENDATIONS

It is recommended that an identification protocol in the form of a child study is undertaken and coordinated by the school counsellor to identify gifted students with a learning disability. The recommended protocol consists of the following assessments which provide a diagnosis of GLD:

- IQ test
- Reading and spelling assessment
- Vision and hearing assessment
- Physical development assessment

These assessments would be undertaken by the school counsellor, a psychologist, speech therapist, occupational therapist, optometrist and physiotherapist. An

assessment protocol eliminates the need for continual assessment as experienced by Emma. Reports are collated by the school counsellor and a summary of the findings and recommendations compiled and provided to the teachers. If necessary a specialist is brought into the school to provide additional information and interpretation of the reports. It may not be necessary to undertake all assessments as an individual assessment may highlight a student's disability and identify their giftedness.

It is recommended that teacher training in the field of gifted education is made compulsory at the undergraduate level. For teachers currently teaching in schools, it is recommended that provision is made and opportunity is provided to complete post graduate level training in gifted and special education, financed by the appropriate education authorities. Teachers need to be provided with release from the classroom to undertake such courses. Additionally, the recommended training should focus on identification and instructional strategies including differentiating the curriculum for diverse learners in an inclusive classroom.

This research has demonstrated that parents identify their children as GLD. As a result they have a large amount of information which is relevant to their children and which includes not only test results but also recommendations for practices to support their child in the classroom. It is important that the parent-school partnership is fostered. In order to achieve this, it is recommended that parents are provided with opportunities for training and working with schools and school staff in a productive and informed manner for the benefit of GLD students.

There is a need for the current gifted provisions to be reviewed, mandated and revised if necessary in order to take into account the difficulties experienced by gifted students with a learning disability. This revision would include considering the current selection procedures for gifted and learning disability programs and consideration of the possible biases in the procedures.

Currently there exists confusion about the definition of learning disabilities and the criteria that should be applied. It is recommended that a universal definition of

learning disabilities is established and combined with a definition of giftedness to create an agreed definition of GLD.

Currently Australia does not have a national venue for the conduct of research and the dissemination of information about gifted education. The development of a National Centre is recommended to provide such a venue for the conduct of research, the development of resources, and the establishment of alternate delivery systems for the education of students who are gifted, GLD or learning disabled.

10.7 LIMITATIONS

With a return rate of only 27% it is not possible to generalise the findings of the survey portion of this research. A greater response rate may have provided different results particularly with respect to teachers' attitudes to and knowledge of gifted education.. Further research could be extended to a larger sample of teachers and school counsellors from other states, Nevertheless the qualitative data from the case studies, provided patterns and themes that could contribute to our developing theories on the education of GLD students.

The focus of this research was on qualitative data and may have benefitted from additional quantitative data in order to provide further data for comparison. Quantitative data may consider issues such as gender and age of identification of either giftedness or a learning disability in addition to research of the emotional and social effect of being GLD. Therefore, another recommendation for further research is that designs that draw on quantitative methods are utilised to complement existing qualitative research.

This research would have been enhanced by obtaining samples of teachers' work that they considered as providing for gifted students in the classroom as well as collecting samples of students' work from the students that teachers considered were gifted. This level of data would have provided greater information about teachers' understandings and knowledge of gifted students and gifted education. Future research would benefit from these additional data being collected.

10.8 FURTHER RESEARCH

Research that provided for a follow-up study of the case study participants including those students whose data were not analysed in depth for this study, would validate the emerging themes of this project.

In order to study teachers' and school counsellors' attitudes to, and knowledge of GLD students, it is necessary to research and develop an instrument that is specifically related to, and relevant for this population of students. This research would include a focus on an identification protocol and appropriate instructional strategies teachers would use in the classroom for GLD students. As a result of the development and analysis of the instrument, a professional development program would be established on the basis of the results of teachers' and school counsellors' attitudes, values with respect to GLD students.

Due to their strength and weaknesses, GLD students experience unique social and emotional issues as demonstrated in this research with the case study participants talking about suicide or participating in counselling programs. A qualitative research project that focused on the social and emotional issues of a large sample of GLD students would provide an understanding of these issues and strategies to support GLD students' social and emotional development.

The current estimates for the number of students who may be GLD range from 2% to 36% of the gifted and learning disabled student populations. These figures are based on US research. It is necessary to establish estimates for Australian students. Further research would consider the implementation of an identification protocol, initially in selective high schools and opportunity classes, as these students have already been identified as gifted. Quantitative research would provide an estimate of the number of GLD students in these schools. This research could then be extended to encompass mainstream and comprehensive schools across the different education systems.

This research provided data relevant to NSW DET schools, and to establish generalisation of the findings, further research within the Catholic and Independent systems is required, in order to explore the relevant theoretical frameworks found with respect to NSW DET schools. Documentation outlining the context of the schools that would be studied within these education systems would need to form part of the research project.

10.9 CONCLUSION

GLD students in Australia are a minority group who are underrepresented in gifted programs in schools. This research demonstrated that identification is occurring only through the efforts of the students' parents, and in spite of the attitude and negative responses from schools and education systems. The students in this research are experiencing emotional and social problems as a result of a lack of identification and appropriate educational programs. Parents are only too willing to share their knowledge of GLD children and to work with the schools.

This research demonstrated that teachers are willing to meet the academic needs of GLD students but they do not have the ability, knowledge or support to be able to do so. They were interested to learn more in order to provide appropriate educational experiences for this group of students and felt that with the support and cooperation of all stakeholders this could be achieved.

Currently a variety of definitions exist for giftedness and learning disabilities but not GLD. Identifying GLD students in the school system is unlikely to occur while there is a definite and visible divide between students with learning disabilities and students who are gifted.

The issue of the identification of GLD students is a complex one which requires input and cooperation from numerous stakeholders in order to consider a student's emotional and social development, physical and educational development, taking into account the families, the student and the school communities. With recognition from education systems of GLD students and their unique educational needs, and with training and support from senior educational personnel, teacher training

institutions and policy makers, these students are more likely to have opportunities to reach their academic potential.

There has been a considerable increase in the profile of gifted education. It is time to put the spotlight on the GLD population that they may have similar opportunities. Teachers need to be provided with an identification protocol for these students in order that their educational needs be met. Parents need to be supported and feel that the schools recognise GLD students and are prepared to provide appropriate educational programs that meet their academic needs. This research although with only a small sample size, provided an in-depth understanding of the difficulties that GLD students may face in NSW schools. Further research in all aspects of this population is essential.

REFERENCES AND APPENDICES

REFERENCES

- Adams, C. M. & Pierce, R. L. (2004). Attitudes of American & English preservice teachers toward gifted learners. *Gifted and Talented International*, 19, 15-23.
- Baldwin, A. Y. & Vialle, W. (1999). *The many faces of giftedness: Lifting the masks*. Canada: Wadsworth Publishing Company.
- Barton, J. M. & W. T. Starnes (1989). Identifying distinguishing characteristics of gifted and talented learning disabled students. *Roeper Review*, 12(1), 23-29.
- Bateman, B. D. & Chard, D.J. (1995). Identifying students who have learning disabilities. *The Oregon Conference Monograph*, 7, 3-11.
- Baum, S. (1988). An enrichment program for gifted learning disabled students. *Gifted Child Quarterly*, 32(1), 226-230.
- Baum, S. (1990). The gifted/learning disabled: A paradox for teachers. *Education Digest*, 55(8), 54-57.
- Baum, S., Cooper, C. R., & Neu, T. W. (2001). Dual differentiation: An approach for meeting the curricular needs of gifted students with learning disabilities. *Psychology in the Schools*, 38(5), 477-490.
- Baum, S., L. Emerick, J., & Herman, G. N. & Dixon, J. (1989). Identification programs and enrichment strategies for gifted learning disabled youth. *Roeper Review*, 12(1), 49-53.
- Baum, S. & S. V. Owen (1988). High ability learning disabled students: How are they different? *Gifted Child Quarterly*, 32(3), 321-326.
- Baum, S., Owen S. V. & Dixon, J. (1991). *To be gifted and learning disabled: From identification to practical intervention strategies*. Melbourne: Hawker Brownlow Education.
- Bees, C. (1998). The GOLD program: A program for gifted learning disabled adolescents. *Roeper Review*, 21(2), 155-161.
- Betts, G. T., & Neihart, M (1988). Profiles of the gifted and talented. *Gifted Child Quarterly*, 32(2), 248-253.
- Bisland, A. (2004). Using learning-strategies instruction with students who are gifted and learning disabled. *Gifted Child Today*, 27(3), 52-58.

- Boodoo, G. M., Bradley C. L., Frontera, R.L., Pitts, J.R., & Wright, L.B. (1989). A survey of procedures used for identifying gifted learning disabled children. *Gifted Child Quarterly*, 33(3), 110-114.
- Brody, L.E. & Mills, C.J. (1997). Gifted children with learning disabilities: A review of the issues. *Journal of Learning Disabilities*, 30(3), 282-296.
- Burns, R.B. (1998). *Introduction to research methods* (3rd ed.). South Melbourne: Addison Wesley Longman Australia Pty Ltd.
- Chipeco, A. D. (2004). *Factors associated with the attitudes of elementary level classroom teacher toward gifted education*. Unpublished doctoral dissertation, Widener University, Delaware.
- Cline, S. & Hegeman, K. (2001). Gifted children with disabilities, overcoming the stereotypes. *Gifted Child Today*, 24(3), 16-25.
- Cohen, L., & Manion, L. (1994). *Research methods in education* (4th ed.). London: Routhledge.
- Council for Exceptional Children. (n.d.). *Gender differences impact learning and post school success*. Accessed May 4, 2009. From <http://cec.sped.org>
- Coutinho, M. J., & Oswald, P. (2005) State variation in gender disproportionality in special education: Findings and recommendations. *Remedial and Special Education Austin*, 16(1), 7-15.
- Creswell, J. W. (2002). *Educational research: Planning conducting and evaluating quantitative and qualitative research*. Upper Saddle River, New Jersey:: Merrill Prentice Hall.
- Crawford, S. & Snart, F. (1994). Process-based remediation of decoding in gifted LD students: Three case studies. *Roeper Review*, 16(4), 247–252.
- Dabrowski, K. (1964). *Positive disintegration*. London: Little, Brown.
- Davis, G. A. and Rimm, S. B. (2004). *Education of the gifted and talented* (5th ed.). Needham Heights, MA: Allyn & Bacon.
- Dole, S. (2000). The implications of the risk and resilience literature for gifted students with learning disabilities. *Roeper Review*, 23(2), 91-96.
- Dix, J. & Schafer, S. (1996). From paradox to performance: Practical strategies for identifying and teaching GT/LD students. *Gifted Child Today*, 19(1), 22-31.
- Fetzer, E. A. (2000). The gifted learning disabled child: A guide for teachers and parents. *Gifted Child Today*, 23(4), 44-50

- Ferrara, J. (2006). *Preservice teacher preparation in meeting the needs of gifted and other academically diverse students*. Unpublished Senior Honors Thesis, University of Connecticut, Storrs.
- Gagné, F. (1991). *Brief presentation of Gagné and Nadeau's attitude scale: Opinions about the gifted and their education*. Unpublished manuscript.
- Gagné, F. (2004). Transforming gifts into talents: The DMGT as a developmental theory. *High Ability Studies*, 15(2), 119-147.
- Gallagher, J. J. & Courtright, R. D. (1986) The educational definition of giftedness and its policy. In R. J. Sternberg & J. E. Davidson (Eds.), *Conceptions of giftedness* (pp. 93 -111). New York: Cambridge University Press.
- Graham, S. & Harris, K. R. (1989). The Relevance of IQ in the determination of learning disabilities: Abandoning scores as decision makers. *Journal of Learning Disabilities*, 22(8), 500–503.
- Gunderson, C.W., Maesch, C. & Rees, J. W. (1987). The gifted/learning disabled student. *Gifted Child Quarterly*, 31(4), 158-160.
- Guskin, S. L., Peng, C. J. and Majd-Jabbari, M. (1988). Teacher's perceptions of giftedness. *Gifted Child Quarterly*, 32(1), 216-221.
- Hammill, D. D., Leigh, J. E., McNutt, G. & Larsen, S. C. (1987). New definition of learning disabilities. *Journal of Learning Disabilities*, 20(2), 109–113.
- Hannah, C. L. & B. M. Shore. (1995). Metacognition and high intellectual ability: Insights from the study of learning-disabled gifted students. *Gifted Child Quarterly*, 39(2), 95-109.
- Hishinuma, E. S. & S. T. Nishimura. (2000). Parent attitudes on the importance and success of integrated self-contained services for students who are gifted, learning disabled, and gifted/learning disabled. *Roeper Review*, 22(4), 241-250.
- Hishinuma, E. S. & Tadaki, S. (1998). Addressing diversity of the gifted at risk. *Our Gifted Children*, 4(5), 20-23.
- Jobe, D., Rust, J. O. & Brissie, J. (1996). Teacher attitudes toward inclusion of students with disabilities into regular classrooms. *Education*, 117, 148-153.
- Johnson, B., & Christensen, L. (2004). *Educational research, quantitative, qualitative and mixed approaches* (2nd ed.). Boston, MA: Pearson Education Inc.

- Karnes, F. A., Shaunessy, E., & Bisland, A. (2004). Gifted students with disabilities: Are we finding them? *Gifted Child Today*, 27(4), 16-21.
- Kavale, K. A., Forness, S. R. & Lorsbach, T. C. (1991). Definition for definitions of learning disabilities. *Learning Disabilities Quarterly*, 14, 257-265.
- Klassen, R. M., Neufeld, P. & Munro, F. (2005). When IQ is irrelevant to the definition of learning disabilities. *School Psychology International*, 26(3), 297-316.
- King, E. W. (2005). Addressing the social and emotional needs of twice-exceptional students. *Teaching Exceptional Students*, 38(1), 16-20.
- Lewis, E. & Milton, M. (2005). Attitudes of teachers before and after professional development. *The Australasian Journal of Gifted Education*, 14(1), 5-14.
- Little, C. (2001). A closer look at gifted children with disabilities. *Gifted Child Today*, 24(3), 46-64.
- Maker, C. J. & Udall, A. J. (1997). *Giftedness and learning disabilities*. Accessed 13 May, 2009 From http://www.ldonline.org/article/Gifted_and_Learning_Disabilities/6071.
- McCoach, D. B., Kehle, T. J., Bray, M. A. & Siegle, D. (2001). Best practices in the identification of gifted students with learning disabilities. *Psychology in the Schools*, 38(5), 403-411.
- McCoach, D. B. & Siegel, D. (2005, April). *Personal and contextual predictors of teachers' attitudes toward the gifted*. Paper presented at the American Education Research Annual Meeting, Montreal, Canada.
- Mann, R. L. (2006). Effective Strategies for gifted/learning-disabled students with Spatial Strengths. *The Journal of Secondary Education*, 17(2), 112-121.
- Megay-Nespoli, K. (2001). Beliefs and attitudes of novice teachers regarding instruction of academically talented learners. *Roeper Review*, 23(3), 178-182.
- Mercer, C. D., Jordan, L., Allsopp, D. H. & Mercer, A. R. (1996). Learning disabilities definitions and criteria used by State Education Departments. *Learning Disability Quarterly*, 19, 217-232.
- Mills, C.J. & Brody, L.E (1999). Overlooked and unchallenged: Gifted students with learning disabilities. *Knowledge Quest*, 27(5), 36-40.
- Minner, S. (1990). Teacher evaluations of case descriptions of LD/gifted children. *Gifted Child Quarterly*, 34(1), 37-39

- Moon, S. D. (1995). The effects of an enrichment program on the families of participants: A multiple case study. *Gifted Child Quarterly*, 39(4), 198-208.
- Munro, J. (2002). Understanding and identifying gifted learning disabled students. *Australian Journal of Learning Disabilities*, 7(2), 20-31.
- Nass, R. D. (1993). Sex differences in learning abilities and disabilities. *Annals of Dyslexia*, 43, 61-77.
- National Association of Special Education Teachers. (n.d.) *Introduction to Learning Disabilities*. Accessed 4 April, 2009 From <http://www.naset.org/2522.0.html>.
- National Health and Medical Research Council (1990). *Learning Difficulties in children and adolescents*. Canberra: Australian Government Publishing Service.
- National Center for Learning Disabilities (n.d.). *General Information Packet on Learning Disabilities*. ED461225.
- NSW Department of Education and Training: *Policy and implementation strategies for the education of gifted and talented students*. Revised 2004.
- NSW Department of Education and Training: *Who's going to teach my child? A guide for parents and children with special learning needs*. (2005)
- Nielsen, M.E. & Higgins, L. D. (2005). The eye of the storm; Services and programs for twice-exceptional learners. *Teaching Exceptional Children*, 38(1), 8-15.
- Nielsen, M. E. & Mortorff-Albert, S. (1989). The effects of special education service on the self-concept and school attitudes of learning disabled/gifted students. *Roeper Review*, 12(1), 29-36.
- Olenchak, F. R. (1994). Talent Development: Accommodating the social and emotional needs of secondary gifted/learning-disabled students. *Journal of Secondary Education*, 5(3), 40-52.
- Olenchak, F.R. & Reis, S.M. (2002). Gifted students with learning disabilities. In Neihart, M., Reis, S.M., Robinson, N.M. and Moon, S.M. (Eds.). *The social and emotional development of gifted children*. (pp.177-191). Texas: Prufrock Press.
- Phipps, P. M. (1982). The LD learner is often a boy why? *Academic Therapy*, 17(4), 425-430.

- Rice, M. P. (2002). Not just lazy – gifted and learning disabled. Private circulation, Brideun School for Exceptional Children.
- Reis, S. M., Neu, T. W. & McGuire, J. M. (1997). Talents in two places: Case studies of high ability students with learning disabilities who have achieved. *Exceptional Children*, 63, 463-479.
- Reis, S. M., McGuire, J. M. & Neu, T. W. (2000). Compensation strategies used by high ability students with learning disabilities who succeed in college. *Gifted Child Quarterly*, 44(2), 123-134.
- Renzulli, J. S., & Reis, S. M. (1993). *The schoolwide enrichment model: A comprehensive plan for educational excellence*. Melbourne: Hawker Brownlow Education.
- Rogers, K. B. (2002). *Re-forming gifted education: How parents and teachers can match the program to the child*. Scottsdale, Arizona: Great Potential Press Inc.
- Sah, A. & Borland, J. H. (1989). The effects of a structured home plan on the home and school behaviours of gifted learning disabled students with deficits in organisational skills. *Roeper Review*, 12(1), 54-57.
- Shaywitz, S.E., Holahan, J. M., Freudenheim, D. A., Flethcer, J. M., Makuch, R.W. & Shaywitz, B. A. (2001). Heterogeneity within the gifted: Higher IQ boys exhibit behaviors resembling boys with learning disabilities. *Gifted Child Quarterly*, 45(1), 16-23.
- Schiff, M., Kaufman, A. S., & Kaufman, N. L. (1981). Scatter analysis of WISC- R profiles for learning disabled children with superior intelligence. *Journal of Learning Disabilities*, 14, 400-404.
- Shevitz, B., Weinfeld, R., Jeweler, S., & Barnes-Robinson, L. (2003). Mentoring empowers gifted/learning disabled students to soar. *Roeper Review*, 26(1), 37-40.
- Siegel, L. S. (1989). IQ is irrelevant to the definition of learning disabilities. *Journal of learning Disabilities*, 22(8), 469–478.
- Silverman, L.K. (1989). Invisible gifts, invisible handicaps. *Roeper Review*, 12, 37-42.
- Sternberg, R.J. (1991). A triachic view of giftedness: theory and practice. In N.Colangelo & G. A. Davis (Eds.), *Handbook of gifted education* (pp.43-53). Needham Heights, MA: Allen & Bacon.

- Suter, D. P. & Wolf, J. S. (1987). Issues in the identification and programming of the gifted/learning disabled child. *Journal for the Education of the Gifted*, 10(3), 227-237.
- Tallent-Runnels, M. K. & Sigler, E. A. (1995). Gifted students with learning disabilities: The status of the selection of gifted students with learning disabilities for gifted programs. *Roeper Review* 17(4) 246-248.
- Tannenbaum, A. J. (1983). *Gifted children: Psychological and Educational Perspectives*. New York: Macmillan Publishing Company.
- Tashakkori, A. & Teddlie, C. (Eds) (2003). *Handbook of mixed methods in social & behavioural research*. California: Sage Publications, Inc.
- Tomlinson, C. A., Callahan, C. M., Moon, T. R., Tomchin, E. M., Landrum, M., Imbeau, M., Hunsaker, S. L. & Eiss, N. (1995) *Preservice teacher preparation in meeting the needs of gifted and other academically diverse students*. Research monograph 95134. The University of Virginia. Charlottesville, Virginia.
- Torgesen, J. K. (2001) *Empirical and theoretical support for direct diagnosis of learning disabilities by assessment of intrinsic processing weaknesses* Paper presented at the Learning Disabilities Summit: Building a Foundation for the Future Washington DC August, 2001.
- Vail, P.L. (1989). The gifted learning disabled student. In Silver, L. B. (Ed.), *The assessment of learning disabilities* (pp. 135–159). Boston: College-Hill Press.
- Waldron, K. A. & Saphire, D. G. (1990). An Analysis of WISC-R Factors for Gifted Students with Learning Disabilities. *Journal of Learning Disabilities*, 23(8), 491–498.
- Waldron, K. A., Saphire, D. G. & Rosenblum, S. A. (1997). Learning disabilities and giftedness: Identification based on self-concept, behaviour and academic patterns. *Journal of Learning Disabilities*, 20(7), 422–427.
- Weinfeld, R., B., Barnes-Robinson, L., Jeweler, S., & Shevitz, B. (2002). Academic programs for gifted and talented/learning disabled students. *Roeper Review*, 24(4), 226-233.
- Weinfeld, R., B., Barnes-Robinson, L., Jeweler, S., & Shevitz, B. (2005). What we have learned: Experiences in providing adaptations and accommodations for

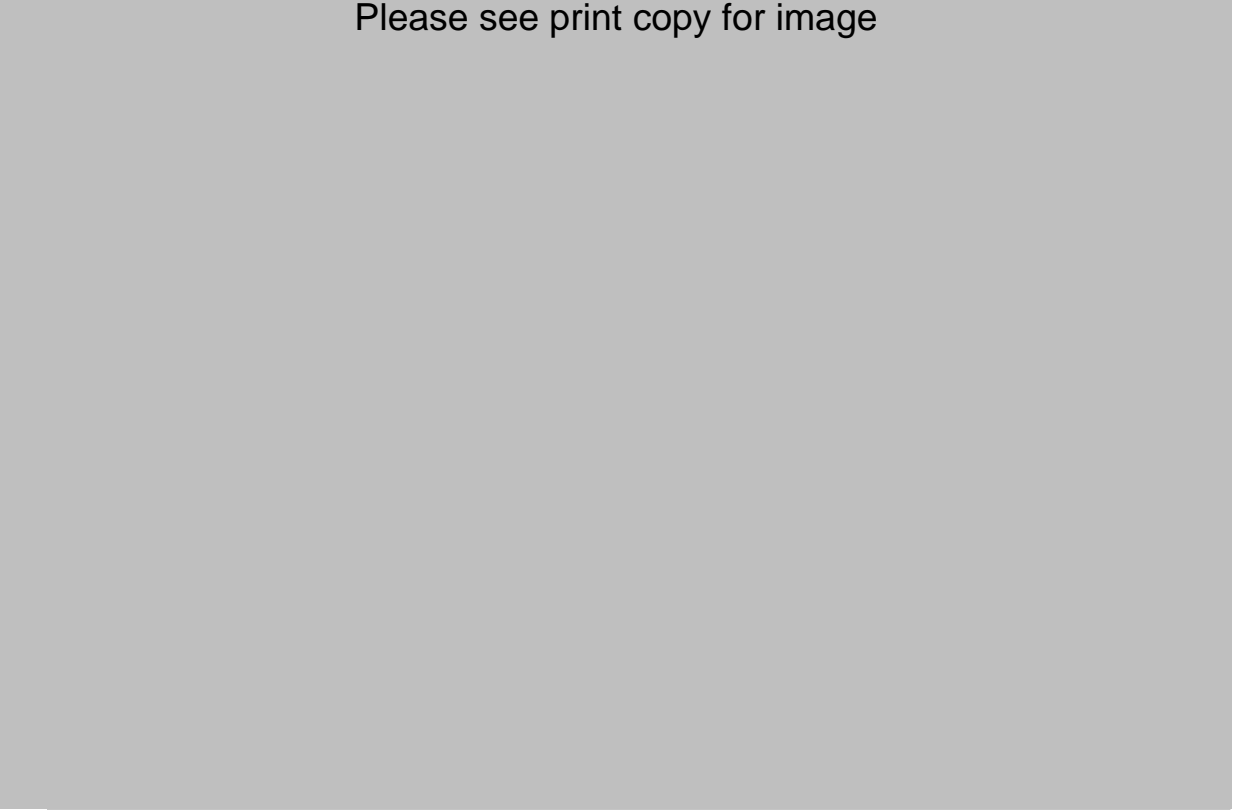
- gifted and talented students with learning disabilities. *Teaching Exceptional Children*, 38(1), 48-54.
- Whitmore, J.R. (1985). *Underachieving gifted students*. ERIC Clearinghouse on Handicapped and Gifted Children. ED 262526
- Winebrenner, S. (2003). Teaching strategies for twice-exceptional students. *Intervention in School and Clinic*, 38(3), 131-137.
- Winner, E. (1996). *Gifted children, myths and realities*. New York: Harper Collins Publishers.
- Woodcock, S. (2008). *Diagnosing potential: Preservice teachers' understanding and expectations of students with learning disabilities*. Unpublished Doctoral Thesis, University of Wollongong, Wollongong.
- Yewchuk, C. (1983). Learning disabled/gifted children: Characteristic features. *The Mental and Retardation and Learning Disability*, 11, 128-133.
- Yin, R.K. (2003). *Case study research: Design and methods*. Thousand Oaks, CA: SAGE Publications

APPENDIX A
Gagné Model 2009

APPENDIX A
GAGNÉ MODEL

Figure A.1 Gagné (2009) Differentiated Model of Giftedness and Talent (DMGT)

Please see print copy for image



APPENDIX B

SURVEY OF PRACTICES WITH STUDENTS OF VARYING NEEDS (SOP)

APPENDIX B

SURVEY OF PRACTICES WITH STUDENTS OF VARYING NEEDS (SOP)

This instrument is designed to help us understand teacher and school counsellor attitudes about classrooms, students, and teaching practices. The instrument will take about 15 minutes to complete. Do not put your name on the paper. When you have completed the survey please place it in the envelope provided, seal it, and return the envelope to your school clerical officer. Thank you for taking time to participate in this study.

Please indicate the following demographic information about yourself.

1. Gender: Male ☐ Female ☐
2. Age range: 20 – 29 ☐ 30 – 39 ☐ 40 – 49 ☐ 50 – 59 ☐ 60+ ☐
3. Please tick the educational qualifications you hold:

- | | |
|---|--------------------------|
| Teaching diploma (2 or 3 year) | <input type="checkbox"/> |
| Teaching diploma plus graduate diploma (total of 4 years) | <input type="checkbox"/> |
| Bachelors degree | <input type="checkbox"/> |
| Bachelors Honours | <input type="checkbox"/> |
| Bachelors degree plus graduate diploma | <input type="checkbox"/> |
| Masters degree | <input type="checkbox"/> |
| Masters Honours | <input type="checkbox"/> |
| Ed. D. or other professional doctorate | <input type="checkbox"/> |
| Ph. D. | <input type="checkbox"/> |
| Other (specify) | <input type="checkbox"/> |

4. Please tick the professional position you currently hold

- | | |
|---|--------------------------|
| Teacher | <input type="checkbox"/> |
| School administrator (principal, deputy or assistant principal) | <input type="checkbox"/> |
| Administrator with teaching load | <input type="checkbox"/> |

How much time is spent in each role? ____hrs admin & __hrs teaching per week

Advisory or support teacher ☐

Counsellor ☐

5. How many years have you been teaching? ____yrs teaching & __yrs admin (school administrators, please break down into teaching years and admin years)

6. Teaching area: Primary ☐
Secondary (subject _____) ☐
Special Education ☐

7. Is your school: NSW Department of Education ☐
Catholic systemic ☐
Catholic independent ☐
Independent ☐

8. Does your school have any form of special provision for gifted and talented students? If so, please describe.

9. Does your school have any form of special provision for students with a learning disability? If so please describe.

10. Do you hold any position of special responsibility for gifted children in your school (eg specialist teacher of gifted, teacher of O.C. class, teacher in selective high school, etc). If so please explain briefly.

11. Do you hold any position of special responsibility for children with a learning disability in your school? If yes please explain briefly.

12. Have you ever done any formal study in the education of gifted children? If so, please describe the subject or course and its duration.
13. Have you ever done any formal study in the education of children with a learning disability? If so please describe the subject or course and its duration?

SURVEY FOR TEACHERS

Part I:

Read each statement and circle the response that best describes your feelings about the statement. Circle SA if you strongly agree, A if you agree, D if you disagree, SD if you strongly disagree, and DK if you don't know how you feel about the statement.

- | | |
|--|----------------------|
| 1. A student who is learning disabled will usually be a low achiever in most subjects. | SA A D SD DK |
| 2. The regular curriculum will challenge all students if the teacher is interesting and exciting. | SA A D SD DK |
| 3. Gifted students can make it on their own without teacher direction. | SA A D SD DK |
| 4. Remedial students find it difficult to work on their own without teacher direction. | SA A D SD DK |
| 5. It is important to assess students' knowledge about the topic before beginning a new unit. | SA A D SD DK |
| 6. If tests indicate that a student has acquired basic skills, the teacher should omit the regular assignments and modify the curriculum for that student. | SA A D SD DK |
| 7. Gifted students will take their regular assignments and make them more challenging on their own. | SA A D SD DK |
| 8. If students have already mastered some of the material before starting a unit, they should be given alternative assignments. | SA A D SD DK |
| 9. Remedial students may need additional time to practice to master basic skills. | SA A D SD DK |
| 10. An effective way to identify gifted students is to look for students with the highest grades. | SA A D SD DK |
| 11. In the classroom, content should be varied to match students' interests and abilities. | SA A D SD DK |
| 12. To assure that all students have the same knowledge base, it is appropriate to present curriculum information to all students in the same way. | SA A D SD DK |
| 13. Allowing gifted students to work on assignments that are different from the rest of the students is playing favorites and fostering elitism. | SA A D SD DK |
| 14. Students who are learning disabled are usually poor readers. | SA A D SD DK |
| 15. Average students need to spend most of their time working in teacher-directed activities. | SA A D SD DK |
| 16. Gifted students need longer assignments since they work faster. | SA A D SD DK |

17. It is important for all students to do workbook exercises, review pages, and textbook assignments because these activities are an integral part of the curriculum.	SA	A	D	SD	DK
18. Working too hard in school leads to burn-out in gifted students.	SA	A	D	SD	DK
19. Remedial students do not do well in most subjects.	SA	A	D	SD	DK
20. Learning-disabled students who are gifted will need to concentrate their study to remediate their weaknesses so they can go on to use their areas of strength.	SA	A	D	SD	DK
21. Gifted students are easy to identify in the classroom.	SA	A	D	SD	DK
22. Work that is too easy or boring frustrates a gifted child just as work that is too difficult frustrates an average learner.	SA	A	D	SD	DK
23. Assignment length and homework assignments are usually designed to meet the needs of the average learner.	SA	A	D	SD	DK
24. Gifted students should be encouraged to direct their own learning.	SA	A	D	SD	DK
25. Having some students work on different assignments results in unfair grading.	SA	A	D	SD	DK
26. Students who differ markedly in ability level from the average learner should be taught in special classes to fully meet their needs	SA	A	D	SD	DK
27. Some underachievers are actually gifted children.	SA	A	D	SD	DK
28. While it is appropriate for students to work on different assignments commensurate with their ability levels, the means of assessment should be the same for all students.	SA	A	D	SD	DK
29. Remedial students have difficulty grasping concepts and need a more fact-based curriculum.	SA	A	D	SD	DK
30. If a gifted student is doing poorly in spelling, it is necessary to deal with the weakness in spelling before presenting more advanced content in other areas.	SA	A	D	SD	DK
31. All students in the class should take the same test to show mastery of the material in a unit.	SA	A	D	SD	DK
32. Removing special education and gifted students from the classroom for special classes is disruptive to the class schedule.	SA	A	D	SD	DK

33. In teaching gifted students, teachers should modify the content only, since all students need to use the same processes and can generate the same projects.
34. Having gifted students work on individual projects or assignments isolates them from the rest of the class.
35. Grouping students is more detrimental than beneficial.

SA A D SD DK

SA A D SD DK

SA A D SD DK

Part II:

In thinking about students in the classroom, please rank the following three groups according to the amount of time and attention each one receives. Place a 1 beside the group receiving the most of your attention. Place a 2 besides the next group. Place a 3 beside the group receiving the least amount of attention. If you feel you give equal time to all groups, place an E in each blank.

Special education students _____

Average students _____

Gifted students _____

Part III:

How confident do you feel about the following? Rate from 1 (no confidence) to 5 (very confident) by circling the response that best describes your feelings:

Adapting my lessons to meet the needs of gifted learners

Adapting my lessons to meet the needs of remedial learners

Accommodating varying levels of ability in my class

Assessing where students are and designing appropriate lessons

Individualizing instruction to meet the needs of gifted learners

Individualizing instruction to meet the needs of remedial learners

Identifying gifted students

Identifying remedial students

1 2 3 4 5

1 2 3 4 5

1 2 3 4 5

1 2 3 4 5

1 2 3 4 5

1 2 3 4 5

1 2 3 4 5

1 2 3 4 5

Part IV:

Which specific techniques, activities, or instructional strategies do you think you would use with each of the following learners in the classroom? Place a check in the appropriate column. Do not tick strategies unfamiliar to you.

	Gifted Students	Average Students	Special Education Students
Ability grouping			
Activities to enhance creativity			
Cooperative learning			
Curriculum compacting			
Drill and practice			
Higher level thinking activities			
Independent study			
Individual instruction			
Interdisciplinary activities			
Learning centers			
Problem-solving activities			
Projects			
Values training			
Workbook exercises			

APPENDIX C

PARTICIPATION CORRESPONDENCE AND FORMS



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30 January 2007

LETTER TO SCHOOL PRINCIPAL

Dear Principal

We would like to invite teachers and the school counsellor at your school to participate in a study being conducted by a PhD student in the Faculty of Education at the University of Wollongong. The study is titled: *An Enigma: The identification of gifted students with a learning disability*. We are writing to seek your approval and assistance to conduct this research.

The purpose of the research is to investigate the barriers to identifying students who are gifted and may have a learning disability in order to provide strategies to enable teachers and school counsellors to identify these students, and hence provide appropriate educational programs for them.

Approval is sought to visit the school, at which time surveys will be delivered for teachers and the school counsellor volunteers to complete. The survey will take approximately 15 minutes to complete. Teachers and the school counsellor will be provided with Participation Information Sheets and Consent forms, copies of which are included with this letter. Teachers and school counsellors will be given the opportunity to volunteer to not only complete the survey, but also to be interviewed afterwards. This group will be interviewed for approximately 30 minutes at a later date and time, to be arranged by the participants with the researcher. If there are any questions or concerns you can contact the Ethics Officer, Human Research Ethics Committee, University of Wollongong on (02) 4221 14457.

Should you require any further information please do not hesitate to contact any member of the research team.

Yours sincerely

Catherine Wormald	Associate Professor Wilma Vialle	Dr Deslea Konza
Faculty of Education	Faculty of Education	Faculty of Education
02 4221 4617	4221 4434	4221 3603
cmw959@uow.edu.au	wvialle@uow.edu.au	dkonza@uow.edu.au



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25 January 2007

Christopher Barrett
Education Officer, Human Resources
Po Box 217
LEICHHARDT NSW 2040

Dear Christopher

Please find enclosed a copy of the University of Wollongong Ethics Committee's approval to conduct the research titled, An Enigma: Identification of gifted students with a learning disability.

Yours sincerely

Catherine Wormald



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6 November 2006

PARTICIPANT INFORMATION SHEET FOR TEACHERS

TITLE: An Enigma: Identification of gifted students with a learning disability.

PURPOSE OF THE RESEARCH

This is an invitation to participate in a study conducted by a researcher at the University of Wollongong. The purpose of the research is to investigate barriers to the identification of gifted students with a learning disability and as a result of the research, provide guidance on ways to identify gifted learning disabled students.

INVESTIGATORS

Associate Professor Wilma Vialle

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Catherine Wormald

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METHODS AND DEMANDS ON PARTICIPANTS:

If you choose to be included in this research you will be asked to complete a survey on teachers' attitudes to students with special needs. The survey will take approximately 15 minutes to complete. Randomly selected teachers who volunteer to be interviewed as well as completing the survey will be interviewed for approximately 30 minutes to expand information gained from the survey and to probe attitudes towards students with special needs. The interview will be audio taped. Typical questions which may be asked in the interview are: What is your understanding of the term 'gifted learning disabled'? How is giftedness defined in your school? How is 'gifted learning disabled' defined in your school? What programs or strategies are currently in place for these students?

RISKS, INCONVENIENCES AND DISCOMFORTS

Apart from the time to complete the survey and approximately 30 minutes for the interview we foresee no risks for you. Your involvement in the study is voluntary and you may withdraw your participation from the study at any time and withdraw any data that you have provided prior to final data collection. Audio recordings will be used for the sole purpose of accurate transcription. Participants may request a copy of the transcript and the audio recording to check for accuracy after which the audio recordings will be destroyed. Refusal to participate in the study will not affect your relationship with the University of Wollongong. Surveys will be collected anonymously and information from interviews will be coded. Confidentiality is assured, and the school, teachers and school counsellors, will not be identified in any part of the research.

POSSIBLE BENEFIT OF THE RESEARCH

This research will provide a basis for identifying gifted learning disabled students and a direction for their educational programs. Findings from the study will be published in a thesis and possibly published in educational journals. Confidentiality is assured, and the school and you will not be identified in any part of the research.

ETHICS REVIEW AND COMPLAINTS

This study has been reviewed by the Human Research Ethics Committee (Social Science, Humanities and Behavioural Science) of the University of Wollongong. If you have any concerns or complaints regarding the way this research has been conducted, you can contact the University of Wollongong Ethics Officer on (02) 4221 4457. Thank you for your interest in this study



6 November 2006

CONSENT FORM FOR TEACHERS

AN ENIGMA: THE IDENTIFICATION OF GIFTED STUDENTS WITH A LEARNING DISABILITY

CATHERINE WORMALD

I have been given information about *An Enigma, The Identification of gifted students with a learning disability* and discussed the research project with Catherine Wormald who is conducting this research as part of a PhD supervised by Associate Professor Wilma Vialle and Dr Deslea Konza in the Faculty of Education at the University of Wollongong.

I have been advised of the potential risks and burdens associated with this research, and have had the opportunity to ask Catherine Wormald any questions I had about the research and my participation.

I understand that my participation in this research is voluntary, I am free to refuse to participate and I am free to withdraw from the research at any time. My refusal to participate or withdrawal of consent will not affect my relationship with the University of Wollongong.

If I have any enquiries about the research, I can contact Catherine Wormald, on 4221 4617 or Associate Professor Wilma Vialle on 4221 4434, or if I have any concerns or complaints regarding the way the research is or has been conducted, I can contact the Ethics Officer, Human Research Ethics Committee, Office of Research, University of Wollongong on 4221 4457.

By signing below I am indicating my consent to:

- ☐ complete a survey
- ☐ be interviewed for 30 minutes
- ☐ the interview being recorded

I understand that the data collected from my participation will be used for a thesis and journal publications and I consent for it to be used in this manner.

Signed Date.../.../....

Name (please print)



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9 September 2006

PARTICIPANT INFORMATION SHEET FOR PARENTS/CAREGIVERS

Dear Parent/Caregiver

This is an invitation for you to participate in a study being conducted by a PhD student at the University of Wollongong. The project is entitled *An Enigma: Identification of gifted students with a learning disability*. We write to seek your participation.

The purpose of the research is to investigate barriers to the identification of gifted students with a learning disability and thus provide guidance on ways to identify gifted learning disabled students.

INVESTIGATORS

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Catherine Wormald
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METHODS AND DEMANDS ON PARTICIPANTS:

If you choose to participate, you and your child will be interviewed about your experiences with the processes of being identified as gifted with a learning disability, as well as the effects on your family and your child of being identified as gifted with a learning disability. The research method will consist of approximately three interviews, each about 30 minutes long. An example of questions that you may be asked include: What was the time period between when you suspected your child had a learning difficulty and diagnosis? Who first identified that your child was gifted with a learning disability? How was your child identified as gifted with a learning disability? What strategies have you put in place for your child to address the issues of being gifted with a learning disability? You will also be asked to provide access to personal files and records as well as consent for the researcher to speak to any health professionals you may have consulted. These records may include reports from professionals such as psychologists, speech therapists, occupational therapists and developmental optometrists. The researcher may want to interview the professionals you have consulted.

RISKS, INCONVENIENCES AND DISCOMFORTS

Apart from approximately three, 30 minute interviews and access to files and records, we foresee no risks for you. Your involvement in the study is voluntary and you may withdraw yours and your child's participation from the study at any time. You may also withdraw any data that you have provided prior to the final collection of data. Refusal to participate in the study will not affect your relationships with the University of Wollongong or with the allied health professionals you have been consulting with.

POSSIBLE BENEFIT OF THE RESEARCH

This research will provide a basis for identifying gifted learning disabled students and a direction for their educational programs. Findings from the study will be published in a thesis and possibly published in educational journals. Confidentiality is assured, and no-one will be able to identify you or your child from any part of the research.

ETHICS REVIEW AND COMPLAINTS

This study has been reviewed by the Human Research Ethics Committee (Social Science, Humanities and Behavioural Science) of the University of Wollongong. If you have any concerns or complaints regarding the way this research has been conducted, you can contact the University of Wollongong Ethics Officer on (02) 4221 4457.

Thank you for your interest in this study



CONSENT FORM FOR PARENTS

Research Title: An Enigma: Identification of gifted students with a learning disability.

Researcher's Name: Catherine Wormald

I have read the participation information sheet and have had the opportunity to ask the researchers any further questions I may have had. I understand my participation in this research is voluntary and I may withdraw at any time from the study.

I understand the risks to me in this study and have read the information sheet and asked any questions about the risks. I understand that I will be involved in audio recorded interviews and that health professionals we have consulted will be invited to be part of the research project.

I am aware that if I have any concerns or complaints regarding the way the research is, or has been conducted I can contact the Ethics Officer, Human Research Ethics Committee Office of Research University of Wollongong on 4221 4457.

In giving my consent I acknowledge that:

- ☐ The procedures required for the project and the time involved have been explained to me, and any questions I had about the project have been answered to my satisfaction
- ☐ I have read the parent information sheet, and have been given the opportunity to discuss the information, and our involvement with the researchers
- ☐ I have discussed participation in the research with my child, and my child assents to their participation in the project
- ☐ I understand that my child's participation in this project is voluntary and a decision not to participate will in no way affect their relationship with the allied health professionals we work

with and that they are free to withdraw at any time and withdraw any data collected prior to final data collection

- ☐ I understand that our involvement is strictly confidential and that no information about myself or my child will be used that will in any way reveal our identity
- ☐ I understand that there will be approximately 3 audio recorded interviews with the researcher, each approximately 30 minutes long
- ☐ I understand that I will be requested to provide copies to the researcher of school reports, and reports by allied health professionals that we have consulted such as speech therapists, psychologists, optometrists and occupational therapists
- ☐ I understand that I am giving permission for allied health professionals that we have consulted, such as speech therapists, psychologists, optometrists and occupational therapists to be contacted and invited to participate in the research
- ☐ I understand that information from me will be used for a thesis and educational journal publications and I consent for it to be used in this manner.

SignedDate.../.../.....

Name (please print)

I give consent for allied health professionals that we have consulted with, such as a psychologist, speech therapist, occupational therapist and developmental optometrist, to be contacted and invited to participate in the research project titled *An Enigma: The Identification of gifted students with a learning disability* being conducted by Catherine Wormald a doctoral student at the University of Wollongong. I give permission for the health professional to provide information about my child.

Signed

Name (please print).....Date:/...../.....

Child's name (please print)



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30 March 2005

PARTICIPATION INFORMATION SHEET FOR CHILDREN

Dear student

This is an invitation to participate in a study being conducted by a PhD student researcher at the University of Wollongong. The research is called *An Enigma: Identification of gifted students with a learning disability*. The purpose of the research is to help teachers and school counsellors identify students who are gifted and may have a learning difficulty.

INVESTIGATORS

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Catherine Wormald
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WHAT WE WOULD LIKE YOU TO DO

If you choose to participate you will be involved in approximately three, 30 minute interviews about your experiences at school and your understanding of what it is like to be gifted with a learning disability. The interview will be recorded on a tape recorder. Typical questions may include: How did you feel when you found out why you found some things difficult to do at school? What is your understanding about the way you learn? We would also like to see any reports from your teachers, school counsellors, psychologists, occupational therapists, developmental optometrists and speech therapists whom you may have talked to.

We understand that there may be some embarrassment during the interview and if this is the case we will talk to the psychologist, speech therapist and occupational therapist that you have been talking with so that they can help you. You are free to decide if you want to be involved in this project or not and you can stop participating at any time. If you decide to stop participating, none of the information you have provided prior to final data collection will be used. If you decide to help us with this study you will be providing us with valuable information about how best to identify students who are gifted and have a learning disability. A report will be written up, but we will not use your name in any part of the research.

ETHICS AND COMPLAINTS

This study has been reviewed by the Human Research Ethics Committee (Social Science, Humanities and Behavioural Science) of the University of Wollongong. If

you are not happy with the way the research has been conducted, you can tell your parents who can contact the Ethics Officer at the University on (02) 4221 4457

Thank you for your interest in this study.



6 November 2006

CONSENT FORM FOR CHILDREN

Research Title: An Enigma: Identification of gifted students with a learning disability.

Researcher's Name: Catherine Wormald

I have read the information sheet and have had the chance to ask the researchers any questions I may have had. I understand my participation in this research is voluntary and I may stop participating in the project without it affecting my treatment by the people who help me. I understand that I can also withdraw any information collected before the final information is collected.

I understand the risks to me in this project and I have read the information sheet and asked any questions I have about the risks. I understand that I will be involved in tape recorded interviews and that my family will also be interviewed.

If I have any concerns or complaints regarding the way the research is, or has been conducted I can contact the Ethics Officer, Human Research Ethics Committee Office of Research University of Wollongong on 4221 4457.

By signing below I am agreeing to:

- ☐ Approximately three tape recorded interviews with the researcher asking me about my experiences at school and with school work. Each interview will last for approximately 30 minutes.
- ☐ Copies of reports from school, and other people who have helped me, being given to the researcher
- ☐ The researcher talking to people who have worked with me and helped me with my problems

I understand that my information will be used for a thesis and printing in educational journals and I agree for it to be used in this manner.

.....

I give permission for my child (please insert your child's name) to participate in this research.

Parent/caregiver

Signature.....

Name(please print).....

Date...../...../.....

Child's signature

Child's name (please print)



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30 March 2005

**PARTICIPATION INFORMATION SHEET FOR HEALTH
PROFESSIONALS**

TITLE: En Enigma: Identification of gifted students with a learning disability.

PURPOSE OF THE RESEARCH

This is an invitation to participate in a study conducted by a doctoral student researcher at the University of Wollongong. The purpose of the research is to investigate barriers to the identification of gifted students with a learning disability and as a result of the research provide guidance on ways to identify gifted learning disabled students.

INVESTIGATORS

Associate Professor Wilma Vialle
Faculty of Education
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Catherine Wormald
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METHODS AND DEMANDS ON PARTICIPANTS:

If you choose to be included in the research you will be asked to provide, with consent from the parents (consent from attached) of the participants, any information related to the identification of the student participant as gifted with a learning disability. You will also be asked to provide any information related to support of the student participant. You will be interviewed for approximately 30 minutes and audio taped to ascertain possible strategies that may help teachers and school counselors identify gifted learning disabled students. The interview will take place at your convenience and at your place of work. Typical questions which may be asked in the interview are : What is your understanding of gifted learning disabled? How did you assess the student and why were these assessments made? What support and strategies did you offer to the student and their family?

RISKS, INCONVENIENCES AND DISCOMFORTS

Apart from the 30 minutes for the interview we foresee no risks for you. Your involvement in the study is voluntary and you may withdraw your participation from the study at any time and withdraw any data that you have provided prior to final data collection. Refusal to participate in the study will not affect your relationships with the University of Wollongong or with your student client and their family.

POSSIBLE BENEFIT OF THE RESEARCH

This research will provide a basis for identifying gifted learning disabled students and a direction for their educational programs. Findings from the study will be published in a thesis and possibly published in educational journals. Confidentiality is assured, and you will not be identified in any part of the research.

ETHICS REVIEW AND COMPLAINTS

This study has been reviewed by the Human Research Ethics Committee (Social Science, Humanities and Behavioural Science) of the University of Wollongong. If you have any concerns or complaints regarding the ways this research has been conducted, you can contact the University of Wollongong Ethics Officer on (02) 4221 4457.

Thank you for your interest in this study



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30 March 2005

CONSENT FORM FOR HEALTH PROFESSIONALS

**AN ENIGMA: THE IDENTIFICATION OF GIFTED STUDENTS
WITH A LEARNING DISABILITY**

I have been given information about *An Enigma: Identification of gifted students with a learning disability* and discussed the research project with Catherine Wormald who is conducting this research as part of a PhD supervised by Associate Professor Wilma Vialle in the Faculty of Education at the University of Wollongong.

I have been advised of the potential risks and burdens associated with this research, and have had the opportunity to ask Catherine Wormald any questions I have about the research and my participation.

I understand that my participation in this research is voluntary, I am free to refuse to participate and I am free to withdraw from the research at any time. My refusal to participate or withdrawal of consent will not affect my relationship with the University of Wollongong.

If I have any enquiries about the research, I can contact Catherine Wormald, on 4221 4617, Associate Professor Wilma Vialle on 4221 4434, or if I have any concerns or complaints regarding the way the research is or has been conducted, I can contact the Ethics Officer, Human Research Ethics Committee, Office of Research, University of Wollongong on 4221 4457.

By signing below I am indicating my consent to:

- ☐ provide documentation relating to student participant
- ☐ be interviewed for 30 minutes.

I understand that the data collected from my participation will be used for a thesis and journal publications and I consent for it to be used in this manner.

SignedDate.../.../....

Name (please print)

APPENDIX D

CODEBOOK FOR SURVEY OF PRACTICES WITH STUDENTS OF VARYING NEEDS (SOP)

APPENDIX D

CODEBOOK FOR SURVEYS

File 1 DEMOGRAPHICS

Variable	SPSS Variable name	Coding instructions
Sex	Sex	1 = males 2 = females
Age	Age	1 = 20 – 29 2 = 30 – 39 3 = 40 – 49 4 = 50 -59 5 = 60+
Educational qualifications	edqual2	1 = diploma = 1+2 2 = bachelors = 3+4+5 3 = master's = 6+7 4 = doctorate = 8 + 9 5 = other = 10 - 14
Educational Qualifications	edqual	1 = teaching diploma (2 or 3 years) 2 = teach dip grad dip 4 years 3 = bachelors 4 = bachelors honours 5 = bachelors + graduate diploma 6 = masters+bachelors 7 = Master honours+bachelors 8 = EdD 9 = PhD 10 = Diploma +Bachelors 11 = Bachelors & post graduate 12 = Bachelors and graduate certificate 13 = Bachelors and Dip Ed 14 = Bachelors Graduate Diploma Barrister
Professional position	Position 2	1 = teacher 2 = admin teacher = 2+3+6+7+8 3 = advisor support = 4 4 = counsellor = 5 5 = admin advisor = 9 6 = principal = 10
Professional position	Position	1 = teacher 2 = admin <10 hours teach>20 hours 3 = administrator teaching load 4 = advisor/support teacher 5 = counselor

Variable	SPSS Variable name	Coding instructions
		6 = administration .5 teaching .5 7 = school administration 8 = administration <10 teach <20 9 = administrator and advisor 10 = principal
Years teaching	yrsteach	Number of years teaching
Years administration	Yrsadmin	Number of years administration
level of teaching	Levelofteach	1 = primary 2 = secondary English 3 = secondary maths 4 = secondary science 5 = secondary HSIE 6 = secondary PDHPE 7 = secondary languages 8 = secondary TAS 9 = special education 10 = Secondary art 11 = Secondary religion 12 = LOTE 13 = LOTE & careers 14 = secondary music 15 secondary 16 secondary careers
Education system	Educatsystem	1 = NSW DET 2 = Catholic Systemic 3 = Other Independent 4 = Catholic Independent
Gifted provisions	Giftprov2	1 = none = 1+36 2 = full time = 2,5,10,23-30,32,42 3 = part time = 3,6,8,11,12,17-21,33-35,38,39,41 4 = withdrawal/enrichment/extension = 4,9,13-16,22,31,37,40
Gifted provisions	Giftprov	1 = no 2 = GATS classes 3 = coordinator /teacher 4 = withdrawal 5 = whole school 6 = subject specific 7 = enrichment 8 = differentiation 9 = enrichment & differentiation 10 = whole & differentiation 11 = gifted 12 = gifted program 13 = differentiation & withdrawal

Variable	SPSS Variable name	Coding instructions
		14 = KLAs differentiated & withdrawal 15 = Extension & competitions 16 = Enrichment & Extension 17 = yes 18 = Part time 19 = Classroom support 20 = Support teacher & differentiation 21 = Support and resources 22 = Various extra-curricular activities 23 = OC 24 = SHS 25 = SHS & acceleration 26 = SHS enrichment & maths challenge 27 = SHS & extra-curricular & competitions & acceleration 28 = SHS acceleration grading extension enrichment HOTS 29 = SHS total curriculum provision 30 = SHS acceleration 31 = acceleration differentiation ability grouping extension enrichment 32 = streamed classes 33 = various programs 34 = year 7 special classes 35 = individual teacher 36 = minimal 37 = withdrawal & acceleration 38 = GATS classes & policy 39 = Differentiated curriculum $\frac{3}{4}$ & $\frac{5}{6}$ GATS classes 40 = teacher training student honours program extension programs TOM extra-curricular 41 = 3 – 6 GATS classes acceleration IEP's Maths camp 42 = teacher training & specialist classes
Learning disability provisions	LDprov2	1 = none = 1, 13 2 = Full time = 3, 5, 8, 9, 11, 14, 16, 21, 23, 24 3 = part time = 2, 3, 6, 7, 10, 12, 15, 17, 18, 20, 25, 26 4 = Withdrawal = 4, 19, 21, 22, 23,

Variable	SPSS Variable name	Coding instructions
27		
Learning disability provisions	LDprov	1 = no 2 = ESL 3 = coordinator/teacher 4 = withdrawal 5 = whole school 6 = subject specific 7 = class support 8 = support unit 9 = special education 10 = teacher + aide 11 = special needs teacher 12 = teacher & resource room 13 = not sure 14 = STL & maths withdrawal 15 = part time 16 = ESL & STLA & parent mentors 17 = parent mentors reading groups 18 = STLA reading groups 19 = individual basis 20 = teacher's aide 21 = support staff & computers & extra time & special provisions 22 = access scheme application 23 = peer support tutoring ESL reading programs 24 = support classes 25 = year 7 special classes 26 = two support teachers focusing on literacy 27 = classroom & withdrawal support
Position of responsibility	of GTresponsibility2	1 = teacher = 1, 5, 9, 10 2 = coordinator = 2, 11, 13 3 = support person = 3, 6, 7, 8, 12, 15 4 = no 5 = counselor = 14
Position of responsibility G&T	GTresponsibility	1 = teacher 2 = coordinator 3 = support person 4 = no 5 = coordinator assisting teacher and planning withdrawal program 6 = part time 7 = position rotated

Variable	SPSS Variable name	Coding instructions
		8 = TOM coordinator 9 = teacher SHS 10 = teacher OC 11 = deputy principal 7 9 11 12 = deputy principal 13 = SHS enrichment coordinator 14 = counselor 15 = G&T committee member
Position of responsibility LD	LDResponsibility2	1 = teacher = 1 2 = coordinator = 2 3 = support person = 3, 5, 7, 8 4 = no 5 = counselor = 6
Position of responsibility LD	LDResponsibility	1 = teacher 2 = coordinator 3 = support person 4 = no 5 = ESL 6 = counselor 7 = year adviser 8 = head teacher welfare
Formal study G&T	GTstudy2	1 = none = 1 2 = masters = 3, 4 3 = COGE = 2 4 = subject unit = 5, 8 5 = professional development = 6, 7, 9
Formal Study G&T	GTstudy	1 = no 2 = COGE 3 = Masters of Special Ed 4 = Masters of Gifted Ed 5 = Undergraduate subject 6 = Professional development 7 = mini certificate 8 = Master's unit 9 = Professional development and undergraduate
Formal study LD	LDstudy2	1 = none = 1 2 = masters = 3 3 = grad cert = 2 4 = subject unit = 4, 8 5 = professional development = 5, 6, 7, 9, 10
Formal study LD	LDstudy	1 = no 2 = Graduate Certificate of Special Ed 3 = Masters of Special Ed

Variable	SPSS Variable name	Coding instructions
		4 = undergraduate subject 5 = professional development 6 = ESL 7 = Professional development & diploma 8 =8 Master's unit 9 = mini certificate 10 = AUSLAN – 12mth @TAFE

FILE 2

SOP Code

Variable	SPSS Variable name	Coding instructions
Part 1 Survey	P1S1	Part 1 Statement 1 SA – 5 A – 4 D – 2 SD – 1 DK - 3
Part 2 Survey Special Education	P2SpecEd	1 = 1 2 = 2 3 = 3 4 = equal 5 = not applicable
Part 2 Survey Average	P2Avg	1 = 1 2 = 2 3 = 3 4 = equal 5 = not applicable
Part 2 Survey Gifted	P2gifted	1 = 1 2 = 2 3 = 3 4 = equal 5 = not applicable
Part 3		
Survey Statement 1	P3S1	
Statement 2	P3S2	
Statement 3	P3S3	
Statement 4	P3S4	
Statement 5	P3S5	
Statement 6	P3S6	
Statement 7	P3S7	
Statement 8	P3S8	

Variable	SPSS Variable name	Coding instructions
Ability grouping	Ability	1 = gifted 2 = average 3 = special education 4 = all 5 = gifted and average 6 = average and special education 7 = gifted and special education 8 = blank 9 = nil
Activities to enhance learning	Creativity	1 = gifted 2 = average 3 = special education 4 = all 5 = gifted and average 6 = average and special education 7 = gifted and special education 8 = blank 9 = nil
Cooperative learning	coop	1 = gifted 2 = average 3 = special education 4 = all 5 = gifted and average 6 = average and special education 7 = gifted and special education 8 = blank 9 = nil
Curriculum compacting	curricomp	1 = gifted 2 = average 3 = special education 4 = all 5 = gifted and average 6 = average and special education 7 = gifted and special education 8 = blank 9 = nil
Drill and practice	drill	1 = gifted 2 = average 3 = special education 4 = all 5 = gifted and average 6 = average and special education 7 = gifted and special education 8 = blank 9 = nil
Higher level thinking activities	HOTS	1 = gifted 2 = average 3 = special education

Variable	SPSS Variable name	Coding instructions
		4 = all 5 = gifted and average 6 = average and special education 7 = gifted and special education 8 = blank 9 = nil
Independent study	Independ	1 = gifted 2 = average 3 = special education 4 = all 5 = gifted and average 6 = average and special education 7 = gifted and special education 8 = blank 9 = nil
Individual instruction	Individ	1 = gifted 2 = average 3 = special education 4 = all 5 = gifted and average 6 = average and special education 7 = gifted and special education 8 = blank 9 = nil
Interdisciplinary activities	Interdisc	1 = gifted 2 = average 3 = special education 4 = all 5 = gifted and average 6 = average and special education 7 = gifted and special education 8 = blank 9 = nil
Learning centres	learncent	1 = gifted 2 = average 3 = special education 4 = all 5 = gifted and average 6 = average and special education 7 = gifted and special education 8 = blank 9 = nil
Problem solving activities	Probsolv	1 = gifted 2 = average 3 = special education 4 = all 5 = gifted and average 6 = average and special education

Variable	SPSS Variable name	Coding instructions
		7 = gifted and special education 8 = blank 9 = nil
Projects	Projects	1 = gifted 2 = average 3 = special education 4 = all 5 = gifted and average 6 = average and special education 7 = gifted and special education 8 = blank 9 = nil
Values training	Values	1 = gifted 2 = average 3 = special education 4 = all 5 = gifted and average 6 = average and special education 7 = gifted and special education 8 = blank 9 = nil
Workbook exercises	workbook	1 = gifted 2 = average 3 = special education 4 = all 5 = gifted and average 6 = average and special education 7 = gifted and special education 8 = blank 9 = nil

APPENDIX E
DOCUMENTS RELATED TO CASE STUDY 3 – EMMA

APPENDIX E

DOCUMENTS RELATED TO CASE STUDY 3 – EMMA

TEST DESCRIPTIONS FOR EMMA

1. Peabody Picture Vocabulary Test – (PPVT – 111A)

This test assesses receptive oral vocabulary, often considered a measure of general intellectual potential. The individual must select a picture among four to match an orally presented word.

2. Detroit Test of Learning Aptitude (DTLA)

The DTLA is a selected group of sub tests each with separate mental age norms, allowing flexible choice of tests to fit the need of the individual. It is important to note the normative data on the DTLA were collected some time ago but the rate of change in scores from pre- to post-testing is relevant. These measures were given in anticipation of future re-testing.

i. Verbal absurdities

This sub-test assesses oral language comprehension and expression. Anecdotes that contain something foolish are read to the individual who then verbally expresses what is illogical about each one. The following sentence is an example of the sub-test: “If I am in a hurry I get a horse because automobiles are too slow.”

ii. Visual Attention Span for Letters

This sub-test assesses for visual memory for letters. The individual is shown non-word sequence of letters such as “s m r” ranging from two to seven letters. After the stimulus is removed the individual repeats the sequence of letters.

3. Detroit Test of Learning Aptitude – 2 (DTLA – 2)

This is a revised edition of the original DTLA and continues to be a selected group of sub-tests, each with separate percentiles and standard scores.

i. Word Opposites

The Word Opposites sub-test assesses expressive oral vocabulary. The individual receives a word orally and has to express its opposite, as in “What is the opposite of hot”?

ii. Design Reproduction

This sub-test assesses visual perception, visual motor processing (eye/hand coordination) and visual memory. The individual is shown a series of designs, one at a time to be remembered and drawn.

iii. Oral Directions

This sub-test assesses the ability to mark visual material after oral directions have been given in entirety. For example “Draw a line from one star to the other star that does not touch the triangle.”

4. Woodcock Reading Mastery Test-Revised (WRMT-R)

The Word Attack sub-test assesses the ability to decode nonsense words composed of one to four syllables. This provides information about the individual’s ability to phonetically process unfamiliar words.

5. Slosson Oral Reading Test-Revised (SORT-R)

This test assesses the ability to decode lists of real words, out of context, from primer to high school level. This provides information about the individual’s word recognition ability.

6. Wide Range Achievement Test-Revised-3 (WRAT-3)

This test assesses academic progress in three areas: word recognition, written spelling and arithmetic computation. It provides grade equivalent, percentile rank and standard scores according to a normed population based on comparable chronological ages.

i. Reading

The individual may be asked to name 15 isolated letters and must then read given words ranging from a single syllable to complex multi-syllable structures. This provides information regarding the individual's word recognition ability.

ii. Spelling

The individual is asked to write his/her name and depending on age and ability may be asked to write isolated alphabet letters and/or spell given words ranging from single syllable to complex multi-syllable real words. This provides information about the individual's spelling readiness and/or written spelling ability.

iii. Arithmetic

The individual depending on age and ability may be given an oral pre-test before being asked to do math computations ranging from simple to complex operations. This provides information about the individual's readiness level in maths as well as computation ability.

7. Gray Oral Reading Test (GORT)

The Gray Oral Reading Test assesses paragraph reading rate and accuracy from the pre-primer to the adult level, by requiring the individual to read paragraphs aloud while being timed. Answers to four oral comprehension questions with respect to the paragraphs read give an indication of ability to recall information. The individual must generate the response without referral back to the paragraph. Although comprehension/recall questions are asked the score is based on errors, rate, and gender to establish a contextual reading score. Grade equivalent is given. It is important to note that the normative data on the GORT were gathered some time ago, but the rate of change of scores from pre-test to post test is relevant. This measure was administered to evaluate reading recall without the support of multiple choice answers.

8. Gray Oral Reading Test-Revised-3 (GORT-3)

Gray Oral Reading Test-Revised-3 is a revised edition of the original GORT and continues to assess paragraph reading rate and accuracy. The GORT-3 also includes multiple choice comprehension questions with respect to the paragraphs read and a

comprehension score is given in addition to scores for rate, accuracy and overall passage decoding ability. This test provides a percentile score according to a normed population based on comparable chronological ages.

9. Lindamood Auditory Conceptualization (LAC) Test

This test assesses phonemic awareness by using coloured blocks to show the identity, number and order of patterns of isolated sounds and sounds within words. A special feature of this test is that its syllable tasks check comparator functions: the individual must code how and where each new syllable presented differs from the previous one in respect to addition, omission, substitution, shift or repetition of one phoneme in the syllable. The judgement represents a cognitive base for self-correction in decoding and spelling. A converted score based on the number of correct responses is reported, not a grade level or percentile.

10. Informal Tests of Writing

This test assesses sound/letter associations and nonsense spelling ability. The individual writes the letter or letters that represent 32 given sounds and spelling nonsense words of one, three and five syllables. The number of correct responses is reported. (Report dated 22/05/04)

Table of Scores: Woodcock-Johnson III Test of Cognitive Abilities and Test of Achievement. Norms based on grade 3.9

Cluster/Test	Raw	GE	Proficiency	RPI	PR	SS(68% Band)
GIA (Std)		2.5	Lmtd to avg	76/90	19	87 (83- 90)
Verbal Ability(Std)		3.7	average	88/90	45	98 (93- 103)
Thinking Ability		2.7	average	84/90	31	92 (89- 96)
Cognitive Efficiency(Std)		2.3	limited	46/90	12	82 (77- 88)
Broad Reading		3.0	limited	64/90	25	90 (88- 92)
Broad Math		3.3	average	83/90	35	94 (92- 97)
Math Calc Skills		2.8	Lmtd to avg	75/90	20	87 (84- 91)
Academic Skills		3.3	Lmtd to avg	76/90	30	92 (90- 95)
Academic Fluency		3.4	average	83/90	35	94 (92- 97)
Verbal Comprehension		3.7	average	88/90	45	98 (93- 103)
Visual- Auditory Learning	34-E	1.1	limited	66/90	6	76 (73- 80)
Spatial Relations	59-D	3.1	average	88/90	42	97 (93- 101)
Sound Blending	19	5.4	average	93/90	60	104 (98- 110)
Concept Formation	18-D	3.0	Lmtd to avg	81/90	37	95 (91- 99)
Visual Matching	37-2	4.3	average	94/90	62	105 (100- 109)
Numbers Reversed	5	K.3	v limited	4/90	2	67(59- 76)

Form B of the following achievement tests were administered

Letter-Word Identification	45	3.5	Lmtd to avg	78/90	39	96 (93-98)
Reading Fluency	32	3.5	average	82/90	42	97 (95-99)
Story Recall		4.2	average	91/90	53	101 (92-110)
Calculation	12	3.0	Lmtd to avg	69/90	25	90 (85-95)
Math Fluency	31	2.3	Lmtd to avg	79/90	12	83 (80-86)
Spelling	28	3.3	Lmtd to avg	81/90	37	95 (91-99)
Writing Fluency	12	3.6	average	86/90	43	97 (92-102)
Passage Comprehension	19	1.9	limited	27/90	8	79 (75-83)
Applied Problems	33	4.2	average	93/90	57	103 (98-108)
Spelling of Sounds	8	K.9	v limited	16/90	0.5	61 (55-67)
	STAND ARD	SCOR ES		DISCR EPANC Y		Significa nt at
Discrepancies Intra-Cognitive	Actual	Predic ted	Difference	PR	SD	+ or _ 1.SD
Verbal Ability(Std)	98	91	7	73	+0.62	No
Thinking Ability(Std)	92	92	0	52	+0.06	No
Cog Efficiency (Std)	82	98	-16	12	-1.17	No
	STAND ARD	SCOR ES		DISCR EPANC Y		Significa nt at
Discrepancies Intellectual Ability/Achievement Discrepancies *	Actual	Predic ted	Difference	PR	SD	+ or – 1.50SD
Broad Reading	90	91	-1	45	-0.12	No
Broad Math	94	93	1	54	+0.10	No
Math Calc Skills	87	95	-8	30	-0.54	No

***These discrepancies compare GIA (Std) with Broad and Basic ACH clusters**

ORAL LANGUAGE SKILLS

Clinical Evaluation of Language Fundamentals – 4

Receptive language tests	
	Scaled Score
i. Concepts & following directions	9 average range
ii. Word Classes-receptive	12 high average range
Receptive language score	103
Expressive Language tests	
iii. Recalling sentences	6 below average
iv. Formulated sentences	6 below average
v. Word classes expressive	9
Expressive language score	82
Core language score	109
Supplementary subtests	
vi. Understanding spoken paragraphs	9 average range
vii. Expressive vocabulary	13 high average
viii. Number repetition-forward	8 low average range
ix. Number repetition-backward	7 low average range
x. Number repetition –total	7
xi. Familiar sequences	10 average range
Language content score	106
Language memory	81
Working memory score	91

Note: A subtest score is a score between 0 and 20 where the average range is 7 to 13. A language standard score is a score between 0 and 200 where the average is 85 to 115.

AUDITORY PROCESSING AND PHONOLOGICAL AWARENESS

The Phonological Awareness Test (PAT)

On this test the Standard Score Average is 100.

	Standard Score	Percentile Rank
Segmentation	81	11
Isolation	79	11
Deletion	90	24
Blending	87	17
Graphemes	80	10

Test of Auditory Perceptual Skills – Revised TAPS-R

On this test the Scaled Score average is 10 and the Standard Score average is 100

CA 8mths	9yrs	Age score	Standard Score	Scaled Score	Percentile Rank
Sentence memory		4yrs 4mths	74	5	4
Word memory		5yrs 7mths	85	7	16
Interpretation of directions		7yrs 1 mth	89	8	23
Word discrimination		5yrs 7mths	81	6	10
Auditory processing (Thinking & Reasoning)		9years	94	9	34

Fisher's Auditory Problems Checklist

This is a checklist that is completed by the parent. The parent's responses were not available to the researcher but it was noted in the report that the mother indicated most of the items that were difficult for Emma and that Emma frequently said "Huh?" or "What?" and that she had difficulty understanding what was required of her (Report dated 18/07/06)

LITERACY SKILLS

Woodcock Reading Mastery Tests

CA 9yrs 8mths Grade – year 4	Raw Score	Age Score	Grade Score
Word attack test	21	7yrs 10 mths	2.5
Word identification test	59	8yrs 9mths	3.5
Passage comprehension Ttst	34	8yrs 8mths	3.3

Test of Reading Comprehension (TORCH)

Percentile Rank (Year 4)	Stanine
<1	1

Test of Written Spelling – 4 (TWS – 4)

Standard score	Age Equivalent	Grade Equivalent
94	8yrs 6mths	3.4

RESULTS - RESEARCH PROGRAM DEVELOPING AUDITORY PROCESSING SKILLS

Assessment date/CA Test	Results	Expected result
12/03/04 7yrs 3mths		
Receptive Syntax – Test for Reception of Grammar (TROG-2)	79 - Below average	Average standard score 100 Average range 85 - 115
Expressive Syntax – Recalling Sentences Subtest of the Clinical Evaluation of language Fundamentals – 4 th Edition (CELF-4)	6 - Below average	Average standard score 10 Average range 7 - 13
Receptive semantics – British Picture Vocabulary Scale – 2 nd Edition (BPVS – 2)	84 – below average	Average standard score 100 Average range 85 - 115
Receptive & Expressive Phonology – The Repetition of Nonsense Words subtest of the NEPSY	13 within average range	Average standard score 10 Average range 7 - 13
Expressive Phonology – Goldman-Fristoe Test of Articulation – 2 nd Edition (GFTA-2) Spoken word	106 within average range	Average standard score 100 Average range 85 - 115
Word Reading – Castles and Coltheart Regular and Irregular Word Lists	Regular word list -1.67 below average Irregular word list -0.89 average	Average z score is 0 average range -1.00 to +1.64
Phonological Decoding – Castles and Coltheart Non-word List	-1.20 low average	Average z score 0 Average range -1.00 to +1.64
17/09/04 7yrs 10mths		
Sustained Attention – The !Score subtest of the Test of Everyday Attention for Children	11 average range	Average score 10 Average range 7 - 13
Arithmetic subtest of the WISC - IV	9 Average range	Average score 10 Average range 7 - 10
Sound discrimination – 4 types tested	Pure tones 118.93 outside normal range	Range of normal scores Pure tones 0 – 66.75
Pure tones	Rapid tones 85.93 normal range	Rapid tones 0 – 213.0
Vowels	Vowels 69.78 normal	Vowels 0 – 87.75
Consonant-vowels		

	range	Consonant-vowels 0 – 114.5
	Consonant-vowels 91.78 normal range	
Test of written spelling – regular and irregular words	Regular words 85 within average range Irregular word 88 within average range	Average standard score 100 Average range 85 - 115
Phonological Decoding – Castles and Coltheart Non-word List	-1.48 low average	Average z score 0 Average range -1.00 to +1.64
Word Reading – Castles and Coltheart Irregular Word Lists	0.24 within average range	Average z score 0 Average range -1.00 to +1.64
Phoneme Discrimination – The Alliteration Test with Pictures from the Phonological Assessment Battery	100 within average range	Average standard score 100 Average range 85 - 115
Word Retrieval and Expressive Phonology – The Picture Naming Speed Test of the phonological Assessment Battery	76 below average	Average standard score 100 Average range 85 -115
Expressive Semantics – Word Definitions subtest of the Test of Work Knowledge	12 within average range	Average standard score 10 Average range 7 - 13
Receptive & Expressive Phonology – The Repetition of Nonsense Words subtest of the NEPSY	12 within average range	Average standard score 10 Average range 7 - 13
Expressive Syntax – Recalling Sentences Subtest of the Clinical Evaluation of language Fundamentals – 4 th Edition (CELF-4)	8 within average range	Average standard score 10 Average range 7 - 13
23/11/04 8yrs		
Expressive Syntax – Recalling Sentences Subtest of the Clinical Evaluation of language Fundamentals – 4 th Edition (CELF-4)	8 within average range	Average standard score 10 Average range 7 - 13
Receptive & Expressive Phonology – The	11 within average range	Average standard score 10

Repetition of Nonsense Words subtest of the NEPSY		Average range 7 - 13
Phoneme Discrimination – The Alliteration Test with Pictures from the Phonological Assessment Battery	100 within average range	Average standard score 100 Average range 85 - 115
Word Reading – Castles and Coltheart Irregular Word Lists	-0.28 within average range	Average z score 0 Average range -1.00 to +1.64
Phonological Decoding – Castles and Coltheart Non-word List	-1.77 below average range	Average z score 0 Average range -1.00 to +1.64
Test of written spelling – Regular and Irregular words	Regular words 93 within average range Irregular word 93 within average range	Average standard score 100 Average range 85 - 115
Sound discrimination – 4 types tested		Range of normal scores
Pure tones	Pure tones 135.91 below normal range	Pure tones 0 – 66.75
Rapid tones	Rapid tones 185.75 below normal range	Rapid tones 0 – 213.0
Vowels	Vowels 133.81 below normal range	Vowels 0 – 87.75
Consonant-vowels	Consonant-vowels 196.29 below normal range	Consonant-vowels 0 – 114.5
Arithmetic Subtest of the WISC - IV	12 Average range	Average score 10 Average range 7 - 10
Sustained Attention – The !Score subtest of the Test of Everyday Attention for Children	7 average range	Average score 10 Average range 7 - 13
12/01/05 8yrs 1mth		
Expressive Syntax – Recalling Sentences Subtest of the Clinical Evaluation of language Fundamentals – 4 th Edition (CELF-4)	8 within average range	Average standard score 10 Average range 7 - 13
Receptive & Expressive Phonology – The Repetition of Nonsense Words subtest of the NEPSY	11 within average range	Average standard score 10 Average range 7 - 13
Phoneme Discrimination – The Alliteration Test with Pictures from the	100 within average range	Average standard score 100 Average range 85 - 115

Phonological Assessment Battery		
Irregular Word Reading – Castles and Coltheart Irregular Word Lists	-0.49 within average range	Average z score 0 Average range -1.00 to +1.64
Phonological Decoding – Castles and Coltheart Non-word List	-1.62 low average range	Average z score 0 Average range -1.00 to +1.64
Test of Written Spelling – Regular and Irregular words	Regular words 87 within average range Irregular word 85 within average range	Average standard score 100 Average range 85 - 115
Arithmetic Subtest of the WISC - IV	7 Average range	Average score 10 Average range 7 - 10
Sustained Attention – The !Score subtest of the Test of Everyday Attention for Children	6 below average range	Average score 10 Average range 7 - 13
Sound discrimination – four types tested:		Range of normal scores
Pure tones	Pure tones 26.61 below normal range	Pure tones 0 – 66.75
Rapid tones	Rapid tones 161.67 within normal range	Rapid tones 0 – 213.0
Vowels	Vowels 28.6 within normal range	Vowels 0 – 87.75
Consonant-vowels	Consonant-vowels 173.5 below normal range	Consonant-vowels 0 – 114.5
7/04/05 8yrs 4mths		
24/05/05 8yrs 6mths		
Word Retrieval and Expressive Phonology – The picture Naming Speed test of the phonological Assessment Battery	Pre training 89 within average range Post training 78 below average	Average standard score 100 Average range 85 -115
Phoneme Discrimination – The Alliteration Test with Pictures from the Phonological Assessment Battery	Pre-training 100 within average range Post-training 100 within average range	Average standard score 100 Average range 85 - 115
Phoneme Discrimination – The Rhyme Test of the Phonological Assessment Battery	Pre-training 81below average range Post-training 76 below average	Average standard score 100 Average range 85 - 115
Irregular Word Reading – Castles and Coltheart Irregular Word Lists	Pre-training -0.14 within average range Post-training -0.28 within average range	Average z score 0 Average range -1.00 to +1.64
Phonological Decoding –	Pre-training -1.77 below	Average z score 0

Castles and Coltheart Non-word List	average range Post-training -0.87 within average range	Average range -1.00 to +1.64
Test of Written Spelling – Regular and Irregular Words	Pre-training - Regular words 87 within average range Post-training 85 within average range Pre-training - Irregular word 93 within average range Post-training 88 within average range	Average standard score 100 Average range 85 - 115
1/07/05 8yrs 7mths		
Word Retrieval and Expressive Phonology – The Picture Naming Speed test of the phonological Assessment Battery	69 below average range	Average standard score 100 Average range 85 -115
Phoneme Discrimination – The Alliteration Test of the Phonological Assessment Battery	84 below average range	Average standard score 100 Average range 85 - 115
Phoneme Discrimination – The Alliteration Test with Pictures of the Phonological Assessment Battery	90 within average range	Average standard score 100 Average range 85 - 115
Phoneme Discrimination – The Rhyme Test of the Phonological Assessment Battery	79 below average range	Average standard score 100 Average range 85 - 115
Irregular Word Reading – Castles and Coltheart Irregular Word Lists	-0.14 within average range	Average z score 0 Average range -1.00 to +1.64
Phonological Decoding – Castles and Coltheart Non-word List	-1.38 low average range	Average z score 0 Average range -1.00 to +1.64
Test of Written Spelling – Regular and Irregular Words	Regular words 83 below average range Irregular word 86 within average range	Average standard score 100 Average range 85 - 115

VISION

1. Vision – long sighted – indicates that the eyes work harder to see clearly – especially for reading, homework, class work. Short sighted – distance vision is blurred. Astigmatism – curvature of the cornea is not spherical, causing blur.
2. Eye tracking – the ability to make large eye movements quickly, efficiently and accurately. If this is reduced a child could find reading, homework, computer usage to be reduced or tiring. Attention and concentration could also be significantly reduced.
3. Espohoria – this is the tendency for the eyes to overwork – possibly causing fatigue and tiredness. Often the book is held too close or a child may continually bring their head close to the book. Espogoria is often caused by long sightedness. If left untreated short sightedness or decreased distance vision may be caused.
4. Convergence – This is the measurement of the child's ability to accurately control fine eye movements. If this is reduced a person can find writing, reading, studying, computer usage etc to be tiring or lose attention. A low result can impact reading and or learning abilities.
5. Eye focusing – this is the ability to efficiently change focus from distance to close vision over an extended time. If this is reduced a person may find writing, reading, studying, computer usage and all near tasks to be difficult. Distance vision may also decrease.
6. Directionality – test whether a child efficiently moves their eyes in a left or right direction. Reading requires the eyes to move efficiently from a left to right direction. If this is not well developed the child might read a word or groups of words from the wrong direction. This can cause the well known reversals of letters, numbers or even words. Signs to look for include: reversing letters or numbers when writing, confusing letters when reading including 'b' for 'd'. 'p' for 'q', '2' for '5' etc. Reading words in reverse e.g.was/saw.
7. Visual form perception – is the ability to perceive the lines, curves and shape that make up letters and numbers. If this is reduced a child will find it difficult in recognising letters and words quickly and efficiently. Signs to

look out for include: word and letter reversals, reduced reading speed, reduced letter and word recognition and confuses similar looking words.

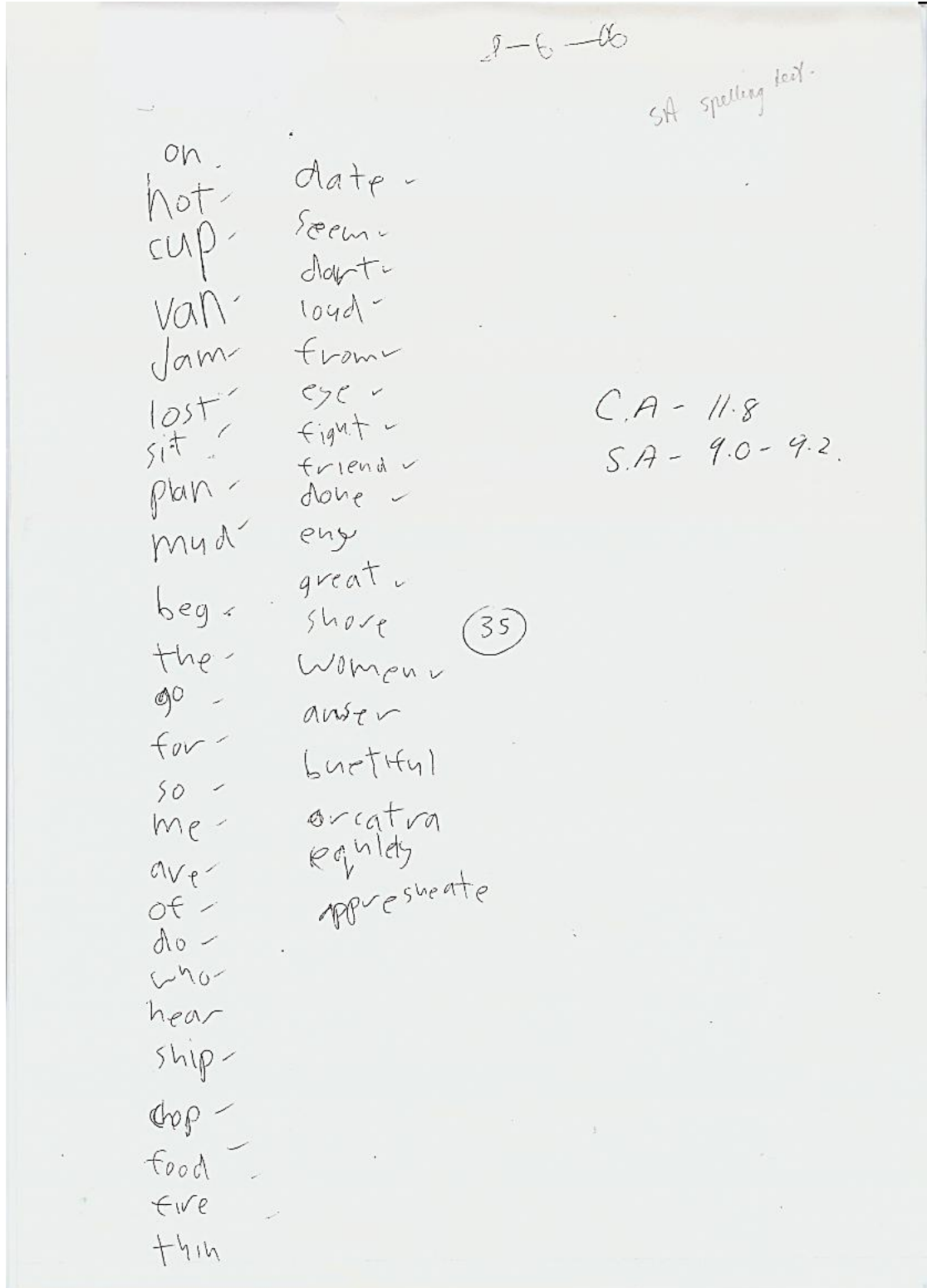
8. Visual attention span – Test of Word Scanning (Tachistoscope). This test if a child can quickly scan the eyes across the word as they read. Reading and spelling require a child to scan across a word and “capture” in their mind’s eye a sequence of letters at one time. If a child can only scan 2 or 3 letters at one time then reading can be very difficult. Signs to look out for include: reduced spelling or “phonetic” spelling, difficulties with “sight” words, reduced word recognition or guesses words, reading slower or with difficulties, reduced visual memory.
9. Visualisation – Test of Sequential Visual Memory (Visual Span). Visualisation is also required in comprehension, word memory and word retention. Signs to look out for include: reduced word memory and long-term retention of words, reduced reading and comprehension and analysis, reducing reading speed and fluency, poor sequencing of tasks or memory and reduced mathematics.
10. Fixations/100 words – the number of eye movements per 100 words. The number of eye movements should be lower than 139.
11. Regressions/ 100words – the number of reverse eye movements per 100 words. The number of regressions should be lower than 31.
12. Reading Rate – the number of words read per minute. The reading rate should be equal or higher than 158.
13. Comprehension – indicates the level of comprehension for the test read. The comprehension score should be over 80%.
14. Reduced reading fluency – signs to look for include: reads slow or with difficulties, reduced reading speed and fluency, guesses words, reduced spelling for sight words, spells phonetically, confuses similar words, reduced visual memory, difficulties with comprehension. (Reports dated 17/04/05 & 26/05/06)

APPENDIX F

DOCUMENT FOR CASE STUDY 4 – DAVID

APPENDIX F

DOCUMENT FOR CASE STUDY 4 - DAVID



APPENDIX G
DOCUMENTS RELATED TO CASE STUDY 5 – SCOTT

APPENDIX G

DOCUMENTS RELATED TO CASE STUDY 5 – SCOTT

CHECKLIST FOR IDENTIFYING CHILDREN WITH MOTOR PLANNING PROBLEMS

Place a tick beside those statements which apply to your child

- ✓ 1. Was very placid as a baby slow to walk and reluctant to climb up on furniture or explore surroundings
- ✓ 2. As a pre schooler was not interested in drawing colouring in or cutting out
- ✓ 3. Had great difficulty learning to pedal a dinky, use a swing *at 4 years of age*, do up buttons, tie shoelaces and use a knife and fork. *Has not acquired these skills as of December 1993 at 4 years of age*
- ✓ 4. Looks physically awkward
- ✓ 5. Looks unsafe when climbing on playground equipment. *Often falls trips and slips*
- ✓ 6. Often says I can't when shown a new activity but can do it if he or she really wants to. *Avoids new tasks and physical activity*
- ✓ 7. May have difficulty learning a new task but having mastered it may become quite good at it and look well coordinated. *Yes!!*
- ✓ 8. Flits from one activity to another *at preschool* although may concentrate *at home* well on one or two favourite activities.
- ✓ 9. Takes a long time, needs help to get dressed.
- ✓ 10. I able to do a task or activity on some days and not on others
- ✓ 11. Does not like to join in ball games and team sports
- ✓ 12. Is often left out of games
- ✓ 13. Messes up other children's games
- ✓ 14. Is easily frustrated and gives up readily
- ✓ 15. Younger *children* brother or sister seems very much better coordinated

Italics and underlining are the mother's additional comments.

Scott's Handwriting sample provided as part of an assessment – completed at 11 years of age

Handwriting Sample Form – Primary School

Name:

School Year:

Date:

The quick brown fox jumps over the lazy dog

The quick
brown fox
jumps over
the lazy
dog

P10

35

From: Wallen, Bonney & Lennox, *The Handwriting Speed Test*, © 1996 Helios Art and Book Co., Adelaide.

The Island

There is a land, untouched by humans,
It's quiet and calm
Animals around every tree
It's a paradise, untouched by humans

Waves calmly swamp the shore
While under water fish swim by
And on the bottom in the reef, eels hide in the colourful coral,
In this paradise, untouched by humans

Up in the trees the birds chirp merrily
Down in the undergrowth, snakes and lizards hurry by
Echidnas snuffle around looking for ants
In this paradise, untouched by humans

Dolphins dive in and out of the water
Seabirds fly overhead
While whales surface for air
In this paradise, untouched by humans

A tiger sees a bear cub and prepares to pounce
While a cheetah runs past
A giraffe is standing munching leaves
In this paradise, untouched by humans

Under the seas a shark swims after a seal
While a manta ray glides slowly past
Little fish dart in and out of the coral
In this paradise, untouched by humans

Rich, green, tropical vegetation
A peregrine falcon soars across the dusty plain,
While underground, moles and rabbits burrow
It's a paradise, untouched by human hands

The mother rabbit just gave birth
While in the pond, the tadpoles swim around
Their frog brothers hop through the tress to find a mate
In this paradise, untouched by humans

Down under the water, a whale swam by followed by her cub
While in the reef a school of newly hatched fish
Hide, protected from their enemies
It's a paradise untouched by humans

Birds are flying everywhere,
While the forest wildlife move restlessly,
A distant boat sails closer, lands on the island

People walk its shores
It was a paradise, untouched by humans

They put up a camp and catch fish in the sea
They scan the area and talk quietly,
They pack their things, take down the tent and depart
It was a paradise, untouched by humans

Weeks later, they come back with ships
Set up camp again.
They fence off part of the plain.
They put up signs that say;
NUCLEAR TEST SITE; STRICTLY NO ENTRY
They take a black ball from one of the ships and put it in the fenced off plain
They packed all of their things,
Light the black ball from the ship and sail away.
It was a paradise, untouched by humans

The black ball went BANG! and exploded
It turned the beautiful island into a barren wasteland.
The seas black and sticky, the animals dead
Sea creature poisoned,
The vegetation died, a black swampy mess

Yes a black swampy mess is all that is left
Of the paradise that was untouched by humans

Oh it's a paradise
Destroyed by humans!

Scott's Recommendations

- Show your teachers and school that you want to learn, people will only help you if you show them you are working towards a goal.
- Get involved with the planning & decision making about your education therapy & medical treatment.
- Know your strengths and use them. If you are good at oral presentations – tape your work/essays. If you are visual spatial – use mind maps and hand them in with your work.
- Get part Scott jobs – the experience is valuable and having your own money is great.
- My strengths are that I am very visual spatial which means I can design things, draw maps and mazes.
- I like to present my work in pamphlet form.
- Because of my dyspraxia I need to use a computer though I find that difficult too.
- At school I did Tricad training – a tech design tool on computer.
- At work I can organise goods onto the bays –my bays were used as the industry standard in a company manual and I am always called on to solve tricky storage problems.
- I have worked as a store man.
- I notice things and pay attention to detail.
- I have a lot of general knowledge especially about current affairs and world geography.

The Bridge Builder

I am a lover, a child with a new toy,
a blind man seeing, a deaf man hearing,
a mother's eyes staring at a new born child.

I am happiness,
My Brother and I.

It was then that the storm came.

I could sense it brewing on the edge of my conscious mind,
there was no escape from the storm,
a dark, seething mass of cloud inside.

We were caught in that storm,
My Brother and I.

And so everything changed.

I am no longer happiness,
I am sorrow,
I am a simple bridge builder,
building over an ever widening chasm.

Sometimes I can reach out and touch his hand again,
but always at the last moment he flees,
the chasm widens at his heels.

I am sorrow, building a bridge over an ever widening gorge.

One day, maybe, we will stand together once more,
My Brother and I

Scott's Brother (2000)

List of factors that made a difference to Scott – compiled by his mother.

1. Acknowledge the ability and the disability – the child is empowered by having a thorough understanding of his strengths & weaknesses. It is never too early to do this – a counsellor may be useful in allowing your child to work through their feelings and understandings about their learning.
2. Try to be honest about your own weaknesses and allow your child the opportunity to see you make mistakes, get frustrated.
3. Identify your child's preferred learning style – this is often a strength that can be used to help your child demonstrate understanding in a school environment. Help them negotiate alternative assignments; consider the purpose of the task in deciding on the format it will take.
4. Identify your child's strengths and encourage them to exploit these at every opportunity.
5. Encourage involvement in an unusual recreational or sporting pursuit. Consider archery, glass blowing, horse riding – these things have a 'cool' element. If you have other children make sure they are involved in different activities. Individual sports such as karate and swimming are also good as the child can concentrate on achieving Personal Bests.
6. As your child gets older involve him in planning meetings with medical and educational professionals. Goals set and compromises reached in consultation are more likely to be achieved
7. In the later years of schooling, an adult organisational mentor can be helpful in assisting the students to be organised. A bit like having a PA to meet with once a week
8. Most importantly remember you are your child's advocate, you know him best and are the only person who is really in a position to fight for him. Sometimes we run out of emotional energy and that is OK. *You can only do what you can do on the day.*

APPENDIX H
DESCRIPTIONS OF ASSESSMENTS AND INTERVENTIONS

APPENDIX H

DESCRIPTIONS OF ASSESSMENTS AND INTERVENTIONS

COGNITIVE ASSESSMENTS

Wechsler Preschool and Primary Scale of Intelligence – Revised (WPPSI-R)

The WPPSI-R is a learning ability test which is regarded as predictive of success in traditional school subjects. The subtests sample under standardised conditions behaviours considered relevant to learning in the school situation. The Verbal Scale refers to subtest I in which the student must respond orally to questions. The Performance Scale refers to subtest in which the student is asked to use objects such as block, puzzles, pictures etc to solve problems. The Full Scale is computed from the child's attainments on both these scales. (School counsellor report dated 20/07/00)

The Wechsler Intelligence Scale for Children – Third Edition (WISC III)

The WISC-III is used to test the general thinking and reasoning skills of students aged six through sixteen. This test has three main scores: a Verbal Score, Performance Score and a Full Scale score. The Verbal Score indicates how well a child does on tasks that require them to listen to questions and give oral answers to them. These tasks evaluate the student's skills in understanding verbal information, thinking with words and expressing thoughts in words.

The Performance Scores indicates how well a child does on tasks that require them to examine and think about things such as designs, pictures and puzzles and to solve problems without using words. These tasks evaluate the child's skills in solving nonverbal problems, sometimes using eye hand coordination and working quickly and efficiently with visual information.

The Verbal and Performance scores are combined into the Full Scale score. The WISC –III scores is one way to view a child’s overall thinking and reasoning skills (Psychologist report dated 10/04/04).

The Wechsler Intelligence Scale for Children – Fourth Edition (WISC-IV)

The WISC-IV is an individually administered test of cognitive ability for children aged 6 years and 0 months through to 16 years 11months. The WISC-IV provides Subtest and Composite scores that represent intellectual functioning in the specific cognitive domains of Verbal Comprehension Index, Perceptual Reasoning Index, Working Memory Index and Processing Speed Index as well as a Composite Score that represents intellectual ability.

The WISC-IV has ten core subtests as well as supplemental subtest. The core subtests are:

- Similarities
- Vocabulary
- Comprehension
- Block design
- Picture concepts
- Matrix reasoning
- Digit span
- Letter numbering sequencing
- Coding
- Symbol search (Psychologist report dated 21/12/04)

Stanford Binet Fifth Edition (SB5)

The goal of the SB5 test is to assess the child’s cognitive strengths and weaknesses in the most efficient and reliable fashion and in the shortest amount of time. It provides comprehensive coverage of five factors of cognitive ability:

- Fluid Reasoning
- Knowledge

- Quantitative Reasoning
- Visual-Spatial Reasoning
- Working Memory

These are examined in both Nonverbal and Verbal Domains through a series of tasks. A Full Scale IQ, Verbal and Nonverbal IQ and composite standard scores spanning these five dimensions are calculated. These have a standard score mean of 100 and standard deviation of 15.

Items for all sub tests except two routing sub-tests are grouped and then arranged into levels of difficulty with six levels for the Nonverbal domain and five levels for the Verbal domain. Not all levels are attempted by the child. Most of the SB5 items are un-timed (Psychologist report dated 12/12/05).

Woodcock-Johnson III Tests of Cognitive Abilities and Tests of Achievement

- *Verbal comprehension* measures aspects of a child's language development in spoken English language such as knowledge of vocabulary or the ability to reason using word knowledge.
- *Visual-Auditory learning* requires a child to learn, store and retrieve a series of visual-auditory associations. On these tests of associative and meaningful memory the child is asked to learn and recall pictographic representations of words.
- *Spatial relations* require a child to identify the two or three pieces that form a complete target shape, a visualization of spatial relationships task.
- *Sound blending* measures a child's skill in synthesizing language sounds (phonemes). The child is then asked to listen to a series of syllables or phonemes and then to blend the sounds into a word.
- *Concept formation* measures a child's categorical reasoning ability. The test also measures the child's flexibility in thinking. The child is presented with a complete stimulus set from which to derive the rule for each item. Immediate feedback is provided regarding the correctness of each response before a new item is presented.

- *Visual matching* measures an aspect of cognitive efficiency – the speed at which a child can make visual symbol discriminations. The child is asked to locate and circle two identical numbers in a row of six numbers. This task proceeds in difficulty from single digit numbers to triple digit numbers and has a three minute time limit.
- *Numbers reversed* requires a child to hold a span of numbers in immediate memory while performing a mental operation on it (reversing the sequence).
- *Letter word identification* measures a child's ability to identify letters and words. The child is not required to know the meaning of the word.
- *Reading fluency* measures a child's ability to quickly read simple sentences, decide if the statement is true and then circle yes or no. The child is asked to complete as many items as possible within a three minute time limit.
- *Story recall* measures aspects of a child's oral language ability including language development and meaningful memory. The task requires a child to recall increasingly complex stories that are presented using audio recording. After listening to a passage the child is asked to recall as many details of the story as they can remember.
- *Calculation* measures a child's ability to perform mathematical computations. The items require the child to perform addition, subtraction and division operations.
- *Math fluency* measures a child's ability to solve simple addition, subtraction and multiplication facts quickly. The child is presented with a series of simple arithmetic problems to complete in a three minute time frame.
- *Spelling* measures a child's ability to write orally presented words correctly.
- *Writing fluency* measures a child's skill in formulating and writing simple sentences quickly. The child is required to write sentences relating to a given stimulus picture that includes a set of three words. This test has a seven minute time limit.
- *Passage comprehension* measures a child's ability to understand what they read. Some items involve the use of pictures. The items become increasingly difficult and require the child to read a short passage and identify a missing key word that made sense in the context of the passage.

- *Applied problems* measures a child's ability to analyse and solve maths problems. To solve the problems the child is required to listen to the problem, recognise the procedure to be followed and then perform relatively simple calculations. Because many of the problems included extraneous information the child needs to decide not only the appropriate mathematical operations to use but also what information to include in the calculation.
- *Spelling of sounds* measures a child's spelling ability, particularly phonological and orthographical coding skills. The items require a child to write single letters of sounds and also to listen to an audio recording and then spell letter combinations that are regular patterns in English spelling (Report dated 09/12/05).

VISION

Computerised Visual Skills Test (Part 1)

Assess the vision and binocular visual skills.

Vision

- Long sighted – indicates that the eyes work harder to see clearly, especially when reading, homework and class work.
- Short sighted – distance vision is blurred, especially in class, driving, etc.
- Astigmatism – curvature of the cornea is not spherical causing blur

Eye Tracking

- The ability to make large eye movements quickly, efficiently and accurately. If this is reduced a child could find reading difficult, homework, computer usage to be reduced or tiring. Attention and concentration in the classroom could also be significantly reduced.

Esophoria

- This is the tendency for eyes to overwork – possibly causing fatigue and tiredness. Often the book is held too close or a child may continually bring their head close to the book. Esophoria is often caused by long sightedness. If left untreated short sightedness or decreased vision may be caused.

Convergence

- This is the measurement of the child's ability to accurately control fine eye movements. If this is reduced a person can find writing, reading, studying, computer usage etc to be tiring or lose attention. A low result can impact on reading and or learning abilities.

Eye Focusing

- This is the ability to efficiently change focus from distance to close vision over an extended time. If this is reduced a person can find writing, reading,

studying, computer usage and all near tasks to be difficult. Distance vision may also decrease.

Computerised Visual Skills Test (Part 2)

These tests assess the visual perception and visual information processing skills. This is the ability of the child to process and use information provided through the vision.

Directionality tests whether a child efficiently moves their eyes in a left to right direction. Reading requires the eyes to move efficiently from a left to right direction. If this is not well developed the child might read a word or group of words from the wrong direction. This can cause the well known reversals of letter, numbers or even words.

Signs to look for include:

- Reversing letters or numbers when writing.
- Confusing letters when reading, including 'b' for 'd', 'p' for 'q', '2' for '5' etc.
- Reading words in reverse e.g. was/saw etc.

Visual Form Perception tests the ability to perceive the lines, curves and shapes that make up letters and numbers. If this is reduced a child will find difficulty in recognising letters and words quickly and efficiently.

Signs to look for include:

- Word and letter reversals.
- Reduced reading speed.
- Reduced letter and word recognition.
- Confused similar looking words.

Visual Attention Span – Test of Word Scanning tests if a child can quickly scan the eyes across the word as they read. Reading and spelling require a child to scan

across a word and ‘capture’ in their mind’s eye a sequence of letters at the one time. If a child can only scan 2 or 3 letters at a time then reading can be very difficult.

Signs to look for include:

- Reduced spelling or ‘phonetic spelling’.
- Difficulties with sight words.
- Reduced word recognition or guesses words.
- Reading slower or with difficulties.
- Reduced visual memory.

Visualisation – Test of Sequential Memory (Visual Span)

Visualisation is required in comprehension, word memory and word retention.

Signs to look for include:

- Reduced word memory and long term retention of words.
- Reduced reading comprehension and analysis.
- Reduced reading and fluency.
- Poor sequencing of task or memory.
- Reduced mathematics.

Computerised Reading Fluency Assessment

Fixations/100 words – the number of eye movements per 100 words

Regressions/100 words – the number of reverse eye movements per 100 words.

Reading rate – the number of words read per minute.

Comprehension – indicates the level of comprehension for the text read (Behavioural Optometrist Report dated 26/05/06).

Eye tracking/strain tests

This group of tests looks at the ability of the eyes to track vertically and horizontally across a page of printed material. Smooth movement in both planes is important. Eye convergence (the ability of the eyes to come together and focus on a

close object) is tested as well. Eye strain is measured with the initial screening test for Irlen lenses and looks for significant signs of eye fatigue.

Vision Therapy

Vision Therapy, also referred to as visual training, is a program aimed at remedying and enhancing an individual's visual abilities. Its function is to:

- Treat existing visual problems such as amblyopia (lazy eye), eye alignment problems, eye coordination problems, poorly sustained near focus, inadequate eye-hand coordination and immature perceptual development.
- Enhance the efficiency and comfort of visual function.
- Help prevent some visual problems.

Each program of visual therapy must be designed to suit the specific needs of the individual both in terms of their visual profile and their goals. Diagnostic testing training procedures and the use of lenses and prisms may be integral component of the successful treatment of a vision problem. The frequency of consultation, the amount of home training and the duration of a course of vision therapy will vary depending on the nature and severity of the problem being treated and the specific needs of the patient.

Vision therapy is not used to strengthen eye muscles, but to improve the coordination and efficient functioning and processing of the visual system. Orthoptics is another term often used in conjunction with vision therapy. Orthoptics is one part of a specific vision therapy program aimed at improving binocular alignment and visual acuity in individual with strabismus and amblyopia.

Unfortunately like all skills and for various reasons there is sometimes a delay in a child's course of development of their visual skills. These delays can cause problems with a child's learning ability. In fact in some cases children are not visually ready to read until well after 5 or 6 years of age.

A child's vision may be clear enough but they may not have developed the appropriate visual skills for reading. When reading it is necessary for a child to

keep their pace along a line of text (tracking skills) as well as keeping the page in focus at the same time (focussing skills). A child with tracking or focussing difficulties is therefore more likely to have difficulty with reading.

To read left to right partly requires tracking skills but also involves visual-spatial skills. It is important to understand that reading from left to right is actually a culturally and educationally imposed requirement. In many cultures reading is vertically arranged or in some cases is arranged from right to left. A child who has not understood or adequately organised the necessary aspects of visual spatial will most likely have difficulty with learning to read.

The level of demand on visual skills required for reading increased throughout a child's learning years. Primary visual skills required for early readers are:

- Tracking and Saccades – scanning from letter word to word looking ahead and predicting text moving from one line to the next.
- Visual memory – skills required for word recognition and copying tasks for example in writing spelling and reading.
- Visual memory – recalling information presented quickly.
- Sequencing – recognising the order of number or letter in words. Left to right progression when reading and writing.
- Visual discrimination – recognising subtle visual differences, i.e. between letters (b/d) and words (was/saw or big/dig), reducing reversals and confusion and this improving overall recognition. Reversals are common in younger children. However if they persist vision therapy may help.
- Focussing skills – the ability opt maintains clear focus at a particular point (a word on a page) and the ability to rapidly focus from one point to another (copying from the board to the book).
(<http://www.acbo.org.au/articles/all.asp> accessed 05/03/09 3.05pm)

AUDITORY ASSESSMENTS

SCAN-C (Revised)

The SCAN-C is used to assess the ability to listen and process a number of complex listening tasks. It helps to identify children between the ages of 5 years 0 months and 11 years and 11 months who have auditory processing disorders and may benefit from intervention.

- ***Filtered words*** tests the ability to ‘fill in’ missing information in order to comprehend the whole message. Consists of two lists of 20 monosyllable words that have been low pass filtered at 1000hz. The words sound like unclear or muffled speech. The test distorts clear speech and sends sounds through to the ear on an angle, for example the speaker not directly facing the subject or speech spoken with an accent. The first list is presented to the right ear and the second list is presented to the left. Low scores in this test indicated poor receptive language skills.
- ***Auditory Figure-Ground*** tests the ability to filter out background noise and focus on speech discrimination. This test also involves auditory attention. Two lists of 20 monosyllable words are presented in the presence of background noise (multi-talker speech babble noise at +8dB speech to noise ratio). This is similar to background noise in a classroom. Low scores in this test indicate that if there is surrounding noise such as talking or object movement it will disrupt the listener to the point of not being able to function socially (in social surrounding) or academically (in classroom, social or work situations). Low scores in this test indicate poor ability in processing more than one piece of information or instruction therefore affecting speech development, receptive language and ability to comprehend and follow instructions.
- ***Competing words*** – a dichotic task which may indicate immature or dysfunctional central auditory pathways. This task involves short term auditory memory. Two lists of 25 monosyllable word pairs are presented to both ears at the same time. For the first list the child has to remember both words and repeat the word said in the right ear first and then the word in the

left ear. The second list requires the child to repeat the word heard in the left ear first and then the word heard in the right ear.

- ***Competing sentences*** – a dichotic listening task which may also indicate dysfunction in the central auditory pathways but with more demands on hemispheric connections. It also tests the ability to use verbal cues to assist auditory memory. The task involves presenting two lists of 10 sentences to the right and left ears simultaneously. The child must repeat the sentence heard in the right ear for the first 10 sentences and then the sentences heard in the left ear for the final 10 sentences (Audiology report dated 29/06/04).

Lindamood Auditory Conceptualisation Test (LAC)

This test assesses a child's ability to discriminate one speech sound from another and to compare the number and order of sounds within a spoken pattern. Intact auditory conceptual skills provide learners with a vital conceptual base that facilitates language and literacy development. The LAC test does not depend on knowledge of reading and writing (Speech pathology report dated 17/05/03).

Time Order Processing (TOP) Test

Threshold Order Processing Test (TOP) is used to measure the speed at which two signals can be processed through the visual and auditory system. The test is divided into 3 subtests: visual, auditory and visual/auditory integrated processing. The child is asked to push a button to indicate when a light, a sound or a combination of the two was first detected. The testing machine is then able to calculate the speed, in milliseconds, at which the brain is able to process the information (Psychologist report 10/04/04).

Spectrally Activated Music of Optimal Natural Structure (SAMONAS)

SAMONAS Sound Therapy is a form of sound therapy developed by Ingo Steinbach (a German musician and sound engineer). It is a variation and extension of the work done by Dr Tomatis and utilises the latest technology in sound recording. SOMANOS Sound Therapy requires listening to a highly sophisticated

system of music voice and sounds from nature which have been purposefully modified or “activated to stimulate and regenerate the processing system in the brain. SAMONAS Sound Therapy offers real results for people with delayed language development, auditory (hearing and listening) disorders, balance and coordination problems and learning difficulties. It involves the daily use of special SAMONAS CDs which are easy to use and listen to. The music is relaxing and therapeutic and can be listened to at any time that suits. SAMONAS Sound Therapy is usually part of part of an integrated program. Sound therapy is only undertaken at an appropriate stage of development, once earlier stages have been completed (<http://www.samonasaustralia.com>)

The estimated duration of the program varies depending on the individual’s response to the program. The therapy is done for 30 minutes per day under the supervision of a parent. The sound therapy is not time consuming as it is done at home while the child read, plays, sleeps or does homework (Document from Sound and Movement Learning).

ORAL LANGUAGE SKILLS

Clinical Evaluation of Language Fundamentals – 3 (CELF-3)

- ***Sentence structure*** – this sub test assesses the child's ability to understand sentences with differing grammatical structure. The child has to point to the correct picture from a choice of four similar pictures that best match a sentence read to the child.
- ***Concepts and Direction*** – This sub-test evaluates the child's ability to follow directions that contain concepts such as 'beginning', 'last', 'middle', 'between' and 'before'. The directions increase in length and complexity.
- ***Word classes*** – this sub-test evaluates the child's ability to select words that are related in some way. For example, the child has to choose the two words that 'go together' from three words: 'fast', 'wet', 'quick'. The words are read to the child.

Expressive Language

- ***Word structure*** – this sub-test assesses the student's ability to use grammatical rules (e.g. Yesterday he walkeded).
- ***Formulated sentences*** – this sub-test evaluates the child's ability to make up sentences using words that are given to the child such as 'and', 'if' and 'car'.
- ***Recalling sentences*** – this sub-test evaluates a child's ability to remember and reproduce sentences of varying lengths and complexity (Speech pathology report dated 17/05/03).

Clinical Evaluation of Language Fundamentals – 4 (CELF-4)

This test provides insight into a number of different language skills required for comprehension and expression. The test evaluates a child's ability to understand word relationships, sentences and stories (i.e. a child's receptive language skills), and to express thoughts and ideas in logical grammatically correct sentences (i.e. a

child's expressive language skills). In addition the CLF-4 evaluates a child's language content, language structure, phonological awareness and working memory. The CELF-4 contains four main sub-tests and several supplementary sub-tests. Various sub-tests are used to calculate Receptive Language, Expressive Language, Language Contents and Language Memory scores. A sub-test scaled score is a score between 0 and 20, where the average range is 7 to 13. A language standard score is a score between 0 and 200 where the average is 85 to 115.

- ***Concepts and following directions*** – this sub-test evaluates a child's ability to follow oral commands of increasing length and complexity.
- ***Word Classes-Receptive*** – This sub-test evaluates a child's ability to identify two words that are related in meaning (including synonyms, opposites, part-whole), when presented with lists of four words.
- ***Recalling sentences*** – this sub-test evaluates a child's ability to recall sentences of increasing length and complexity word-for-word.
- ***Formulated sentences*** – this sub-test evaluates a child's ability to formulate simple, compound and complex sentences with given words such as: 'best', 'if', 'instead' and 'however'.
- ***Expressive vocabulary*** – this test evaluates a child's vocabulary and word finding ability.
- ***Understanding spoken paragraphs*** – this sub-test evaluates a child's understanding, recall and interpretation of information in spoken paragraphs.
- ***Number repetition forward, number repetition backward*** – these tasks evaluate short term auditory sequential memory. The child is required to recall a series of numbers in a forward direction and then in the reverse order. The ability to keep sequences of sounds in short term memory long enough to analyse and re-arrange the information is important for a number of school tasks including mental maths, spelling, reading accuracy and comprehension and sentence construction.
- ***Familiar sequences*** – this test evaluates a child's ability to recite quickly and accurately familiar sequences such as the letters of the alphabet, days of the week, months of the year and various sequences of numbers. The child's

responses are scored in respect to accuracy and speed. This test evaluates a child's phonological memory and phonological retrieval skills.

- ***Rapid automatic naming*** – on this test a child is required to visually process and name repeated stimuli (colours, shapes and colour-shape combinations) quickly and accurately.

Tests of Phonological Awareness – this test assesses a child's awareness of oral language segments (i.e. syllable and phonemes) that comprise words. The beginning reader is faced with the task of decoding a series of printed letters and storing their associated sounds into short term memory. The analysis of phonological structure is an important skill for reading and spelling.

This test assess a child's abilities to rhyme, segment (break up sentences into words and words into syllables and sounds), isolate the first, middle and last sounds in words, delete sounds from words, substitute sounds and blend sounds together to form words. It also assesses grapheme knowledge (sound-letter association) and ability to decode nonsense words. The standard score average is 100.

Test of Auditory Perceptual Skills – Revised (TAPS-R) – this test assesses a child's sentence memory, words memory, interpretation of directions, word discrimination and auditory processing (thinking and reasoning). The scaled scores average is 10 and standard score average is 100.

Fisher's Auditory Problems Checklist – this checklist is completed by the parent and is designed to give an indication of auditory processing difficulties such as auditory discrimination, verbal comprehension, auditory memory, auditory figure-ground discrimination (hearing in the presence of background noise), auditory localisation and auditory attention.

Macquarie University Word Attack Skills Test (MUSEC)

The MUSEC measures ability in naming and identifying letters and sounds. These can be in the form of single, isolated letters or various letter blends and

combinations. e.g. consonant, vowel, consonant or consonant, consonant, consonant, vowel.

Oral Expressive Language Skills

Clear articulation, good repetition of sentences and short passages heard, and any unusual speech difficulties are checked in this section of this assessment (Psychologist report dated 10/04/04).

LITERACY SKILLS

Woodcock Reading Mastery Tests

- *Word attack test* – requires the child to read a list of ‘nonsense’ words. In order to do this effectively a child needs to sequence through each word, linking each letter (or group of letters) with its corresponding sound. The child then needs to keep these sounds in ‘active working’ memory in the correct order long enough to blend them into a whole word. This test therefore evaluates a child’s ‘phonic attack’ or ‘sounding out’ skills.
- *Word identification test* evaluates a child’s ability to read ‘real’ words. Many of these words will be in the child’s ‘sight vocabulary’; i.e. the child will have seen them many times and will have memorised them. Other words will be unfamiliar and will require effective ‘sounding out’ strategies. Reading fluency depends on a child having a well developed ‘sight vocabulary’ as well as the student being able to quickly and accurately ‘sound out’ unfamiliar words.

Neale Analysis of Reading ability – Third Edition is designed to assess the ability of the child to read fluently and to understand what has been read. It can also be used to detect problems in the areas of decoding (sounding out) visual and auditory acuity/perception, syllabication and general word knowledge. Reading and comprehension ages can be calculated. Ages are expressed in years and months (.01 = 1 month through to .11 = 11 months) (Psychologist report dated 10/04/04).

Test of Reading Comprehension (TORCH) requires a child to read a passage and then complete a ‘cloze’ passage to evaluate comprehension of what has been read.

Test of Written Spelling – 4 (TWS-4) evaluates a child’s ability to spell individual words that are both predictable and unpredictable in their spelling patterns. Some of these words will be in the child’s ‘sight vocabulary’. Less familiar words will require the student to break the word into syllables and sounds and write down the sounds in their correct order using the appropriate letters. Students also need to be able to effectively apply spelling rules. Test of Written

Spelling is used to measure a child's regular and irregular spelling. Regular spelling is the ability to spell words that follow the normal sound to letter rules (e.g. 'spring', 'strong', 'signal'). Irregular spelling is the ability to spell words that do not follow the normal sound to letter rules (e.g. 'who', 'sure', 'awful'). Scores on the test are expressed as standard scores. The average range of scores for children the same age is 85 to 115.

South Australian Spelling Test assesses the child's accuracy and proficiency in, and knowledge of spelling words/rules and decoding skills. Close observations during the testing procedure can also uncover problems in auditory and visual areas (both physical and perceptual in nature).

HANDWRITING/WRITTEN EXPRESSION SAMPLE

The Handwriting Speed Test – Wallen, Bonney and Lennox. This test was devised in NSW using students from years 3 to 12. It required a child to write continuously for 3 minutes. It is standardised for the year the child is in and the gender of the child. The child is asked to write a short passage on a topic of their own choosing. The passage is assessed on grammatical correctness, written expressive language ability, punctuation, capitalisation and cohesion of ideas. Handwriting is judged on fine motor control, grip, letter formation and correctness of posture and writing position.

In this test an average score is when the scaled score falls between 7 and 13 and a standard deviation is between 1 and minus 1.

Visual Motor Integration Test (K. E. Beery). This test aims to assess a child's ability to receive visually and reproduce manually (draw), a two dimensional symbol. It requires a child to copy geometric shapes such as squares and triangles. The mean of scores is 100 and standard deviation is 15. (Occupational therapist report dated 08/09/00).

Bonney and Perks – Handwriting Difficulties Assessment – this is an observational assessment and the results are used as a guide for intervention only as no standard scores can be obtained. It is purely movement related taking into

consideration the physical mechanics of writing rather than any perceptual or other learning difficulties. It is divided into three main categories – posture and movement, grip and movement and letter formation and movement.

Reading and Language Assessment

The Test for Reception of Grammar (TROG-2) is used to measure a child's receptive syntax. Syntax is a set of rules that are used to put words together to make sentences. Receptive syntax is the ability to understand sentences that other people say to you. In this task the child is shown a number of pages that show four pictures. They are asked to pick the picture that matches a sentence spoken by the examiner. For example one page has a picture of a girl sitting, a cat sitting, a cat running and a girl running. The child is asked to point to the picture that showed a girl sitting. Scores are expressed as standard scores. The average range of scores for children the same age is 85 to 115.

The Recalling Sentences subtest of the Clinical Evaluation of Language Fundamentals – 4th Edition (CELF-4) is used to test a child's expressive syntax. Expressive syntax is the ability to put words together to make a sentence that makes sense to other people. In this task the examiner reads out a sentence such as "the boat sailed across the lake." The child is then asked to repeat the sentence exactly as the examiner said it. As the task goes on, the sentences become longer and more difficult to remember and say. Scores are expressed as standard scores. The average range of scores for children the same age is 7 to 13.

The British Picture Vocabulary Scale – 2nd Edition (BPVS-2) is used to test much of the English vocabulary a child knows. A child's vocabulary is the range of words that they know, for example 'tooth', 'crying' and 'mowing.' Receptive vocabulary is the range of words that a child understands when they are spoken by other people. In this task the child is shown a number of pages that each showed four pictures. The child is asked to choose the picture that matched a word that they were given. For example on one page, the child is shown a picture of a spoon, a ball, a banana and a dog. The child is asked to 'point to the ball.' Scores on the

BPVS-2 are expressed as standard scores. The average range of scores for children the same age is 85 to 115.

The Repetition of Nonsense Words subtest of the NEPSY is used to test a child's receptive and expressive phonological processing. Phonological processing is the ability to recognise the basic speech sounds in the English language. Receptive phonology is the ability to produce these speech sounds in your own speech. In this task the child listens to a tape of nonsense words such as 'crum-see' and 'in-kewsment.' The child is then asked to repeat each nonsense word after they heard it on tape. Scores on this test are expressed as standard scores. The average range of scores for children the same age is 7 to 13.

The Goldman-Fristoe Test of Articulation – 2nd Edition (GFTA-2) is used to test how well a child articulates consonant sounds and clusters. In this task the child is asked to name a number of pictures (e.g. 'a duck'). Notes are made on how the child pronounced the consonant s and cluster in the words (for example 'd' and 'k' in 'duck') and whether the pronunciations were correct or incorrect. Scores on this test are expressed as standard scores. The average range of scores for children of the same age is 85 to 115.

The Castles and Coltheart Regular and Irregular Word Lists are used to test how well a child is able to read real words. Some of the words are regular words. Regular words can be read using the normal letter-to-sound rules such as 'need', 'plant' or 'mist'. The other words were irregular words. Irregular words cannot be read using the normal letter-to-sound rules, such as 'yacht,' 'blood' and 'pint'. In this test the child is given a pile of cards that each had a regular or irregular word written on it. The child's job is to try and read the words out loud one at a time as best they could. Scores on the Regular and Irregular Word Lists are expressed as z scores which tell how well the child has scored relative to children the same age. The normal range of scores for children the same age is -1.00 to +1.64. Scores higher than 1.64 are above average. Scores from -1.64 to -1.0 are low average scores. Scores lower than -1.64 are below average.

The Castles and Coltheart Non-word List tests how a child is able to read non-words (that is nonsense words). Like regular words, non-words can be read using the normal letter-to-sound rules, for example ‘framp,’ ‘boril or ‘peel.’ Unlike regular words, non-words cannot be read from memory as a child has not seen them before. This makes reading non-words a good test of how well a child knows the letter-to-sound rules. This ability is called phonological decoding. In this test the child is given a pile of cards that each had a non-word written on it. The child has to try and read the non-words out loud one at a time as best they could. Scores are expressed as z scores. The normal range of scores for children the same age is -1.00 to +1.64. Scores higher than 1.64 are above average. Scores from -1.64 to -1.0 are low average scores. Scores lower than -1.64 are below average.

Reading Language and Sound Discrimination Assessment

The !Score subtest of the Test of Everyday Attention for Children is used to assess a child’s sustained attention. Sustained attention is the ability to maintain attention to a task even if it is repetitive or boring. Scores are expressed as standard scores. The average range of scores for children the same age is 7 to 13.

Arithmetic was measured using the Arithmetic subtest of the Wechsler Test of Intelligence for Children – Fourth Edition. In this test the child is asked to solve problems that begin at an easy level and get progressively harder. Scores on the Arithmetic subtest are expressed as standard scores. The average range of scores for children the same age is 7 to 13.

Sound discrimination – four psychological discrimination tasks were used to measure how well a child could hear the difference between similar sounds (discrimination). Testing was done with four types of sounds:

- Pure tones (beeps) that varied in frequency (e.g. tones that sounded higher and lower in pitch).
- Rapid tones that varied in frequency (rapid auditory processing).
- Vowels (‘a’ and ‘e’).
- Consonant-vowels (‘da’ versus ‘ba’).

For children younger than 9 years the range of normal scores is:

- Pure tones: 0 to 66.75
- Rapid tones: 0 to 213.0
- Vowels: 0 to 87.75
- Consonant-vowels: 0 to 114.5

For children 9 years or older the range of normal scores is:

- Pure tones: 0 to 20.7
- Rapid tones: 0 to 77.0
- Vowels: 0 to 77.25
- Consonant-vowels: 0 to 67.5

The Alliteration Test with Pictures from the Phonological Assessment Battery is used to measure a child's phoneme discrimination. Phoneme discrimination is the ability to hear the difference between speech sounds. In this task the child is given 10 items. In each item the child listened to the names of three pictures (e.g. 'road', 'light', 'rain'). The child has to point to the two pictures that started with the same sound. Scores are expressed as standard scores. The average range of scores for children the same age is 85 to 115.

The Picture Naming Speed Test of the Phonological Assessment Battery is used to measure a child's word retrieval and expressive phonology. Word retrieval is the ability to recall a word from memory. Expressive phonology is the ability to produce speech sounds that make up a word so it can be spoken out loud. In this task the child is shown 50 small pictures on a card. The child's task is to name the pictures one after another as fast as they can. Scores are expressed as standard scores. The average range of scores for children the same age is 85 to 115.

The Word Definitions Sub-test of the Test of Work Knowledge is used to measure a child's expressive semantics. Expressive semantics is the ability to explain the meaning of words or sentences. In this task the child is asked to define a list of words that get more difficult as the test progresses. Scores are expressed as standard scores. The average range of scores for children of the same age is 7 to 13.

The Rhyme Test of Phonological Assessment Battery is used to measure a child's phoneme discrimination. In this task the child is given 21 items. On each item the child listened to three words (e.g. 'sail', 'boot', 'nail'). The child has to say aloud the two words that ended with the same sound. Because the child has to remember the three words the Rhyme Test is also a test of phonological memory. Scores on the test are expressed as standard scores. The average range of scores for children the same age is 85 to 115. (Macquarie Centre for Cognitive Science 2005)

SOCIAL AND EMOTIONAL ASSESSMENT

The Achenbach System of Empirically Based Assessment (ASEBA)

This assessment comprises an integrated set of forms for assessing competencies, adaptive functioning and problems. A 113 item checklist is completed by the parents and teachers.

BarOnEQ-i:YV

This assessment is a 60 item self report instrument designed to measure emotional intelligence in young people aged 7 to 18 years. Each age bracket is compared to an age-specific normative sample. The instrument measures Total Emotional Intelligence, Interpersonal and Intrapersonal Intelligences, Adaptability, Stress Management and General Mood.

PHYSICAL ASSESSMENTS

Coordination Skills

This area of assessment looks at both gross and fine motor movement. Muscle tone and confidence of movement are also checked. The child is asked to skip, hop on one or both legs, balance and perform a series of strength tasks that measure physical development (Psychologist report dated 10/04/04).

Integration

Integration is the term referring to the sorting or organising of messages from the senses, so that the appropriate response can be made. There are two sides of each representing the opposite side of the body. There are connections or links between the two sides of the brain. If integration is diminished, processing of information is inefficient. A message may go to the brain, but the response or out going message may lack quality or refinement. Testing is done through the use of both drawing and coordination tasks. The ability to integrate information is essential for ease of learning.

- Cross-crawl test – the child is asked to cross the midline of the body and to tap each knee with the opposite hand in a smooth and rhythmic motion.
- Lazy eight test – the child is asked to draw the figure 8 lying in its side. The child must repeatedly trace this same figure until told to stop.
- Loops test – the child must draw 3 - 4 rows of counter clockwise loops across the paper. The movement of the pencil should be smooth and easy for the child (Psychologist report dated 09/08/04).

Primitive/Postural Reflexes

- *Asymmetrical Tonic Neck Reflex (ATNR)* emerges 18 weeks in utero and integrates 4-6 months neonate. The ATNR directly impacts crawling, hand-eye coordination and if not integrated may impact areas of cross-lateral movement and writing skills.

- ***Symmetrical Tonic Neck Reflex (STNR)*** emerges 9-11 weeks neonate and integrates 9-12 months neonate. The STNR directly impacts forward movement and if not integrated may cause poor posture in chair, poor writing pressure and poor ball skills.
- ***Tonic Labyrinthine Reflex (TLR)*** emerges 12 weeks neonate and integrates 3-36 months neonate. The LTR directly impacts balance and ocular motor function and if not integrated may cause poor balance spatial judgements motion sickness and floppy or rigid posture.
- ***Amphibian reflex*** emerges 6-10 months neonate and is present for the entire life. The Amphibian reflex directly impacts forward movement and if not present may hinder crawling, walking and running skills.
- ***Segmental Rolling Reflex*** emerges 6-10 months neonate and is present for the entire life. The Segmental Rolling Reflex directly impacts integrated cross-lateral movements and if not present may hinder marching, cross-lateral walking and swimming.
- ***Palmer Reflex*** emerges 11 weeks in utero and integrates 2-3 months neonate. The Palmer Reflex directly impacts independent rapid finger movements and if not integrated may cause poor handwriting and other fine motor skills such as the ability to do up buttons, laces or use scissors.
- ***Planter Reflex*** emerges 11 weeks in utero and integrates 2-3 months neonate. The Plantar reflex directly impacts poor placement and if not integrated may cause poor balance and mobility.
- ***Rooting/sucking Reflex*** emerges 24-28 weeks in utero and integrates 3-4 months neonate. The Rooting/Sucking Reflex directly impacts on the infant's ability to feed and if not integrated may cause articulation, chewing and eating difficulties.
- ***Landau Reflex*** emerges 3-10 months neonate and integrates 36 months neonate. The Landau Reflex directly impacts on the ability to isolate upper body movements from the lower body movements and if not integrated may cause uncoordinated leg movements.
- ***Ocular Head Righting Reflex (OHRR)*** emerges 2-3 months neonate and is present throughout life. The OHRR directly impacts balance and ocular

motor function and if not present may cause poor visual tracking, poor balance and sometimes nausea and disorientation.

- ***Labyrinthine Head Righting Reflex (LHRR)*** emerges 2-3 months neonate and is present throughout life. The LHRR directly impacts balance and ocular motor function and if not present may cause poor visual tracking, poor balance and sometimes nausea and disorientation. The test is performed with closed eyes to get a more accurate observation of the OHRR.
- ***Moro Reflex*** emerges 9 weeks in utero and integrates 2-6 months neonate. The Moro Reflex is the earliest form of the fight and flight response and may cause sensitivity to light, sound or touch, Direct impact of the Moro may be inappropriate response to stimuli, causing elective mutism, agrophobia and some autistic tendencies.
- ***Dominance*** should be established by the time a child is 3 years old. To avoid confusion between brain and body, dominance of the hand, foot, eye and ear should all be on the same side. Therefore if the subject is right handed in dominance they should also be right footed, right eyed and right eared. The reverse is also true of left handers. Any confusion or mix in dominance can directly impact all areas of coordination, speed of processing and learning. (Psychologist report dated 08/06/06)

Table A.1 shows the scaling system in the Primitive/Postural Reflex Assessment

Table A.1 Scaling System in the Primitive/Postural Reflex Assessment

Primitive Reflexes	Postural Reflexes
0 = 0% of the reflex is retained	0 = 100% of the reflex is retained
1 = 25% of the reflex is retained	1 = 75% of the reflex is retained
2 = 50% of the reflex is retained	2 = 50% of the reflex is retained
3 = 75% of the reflex is retained	3 = 25% of the reflex is retained
4 = 100% of the reflex is retained	4 = 0% of the reflex is retained

Sensory Integration Functions

A. Somatosensory Perception – the sensory system that detects touch and body position

- **Tactile (touch) Perception** – two systems assessed
 - **Tactile discrimination** – the ability to identify objects through touch and to tell where you have been touched on your body. Touch discrimination is important as a foundation skill for fine motor coordination.
 - **Touch modulation** – this system is protective in nature and can manifest itself in over sensitivity or excessive craving touch.
- **Proprioception** – the internal sense of joint/muscle position and movement which allows children to be aware of where their bodies are in space.

B. Vestibular Perception – vestibular receptors in the inner ear respond to motion or change in position. It influences muscle tone, ocular control, bilateral coordination and balance.